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PACIFIC PULP & PAPER INDUSTRY

Volume 5
Number 6

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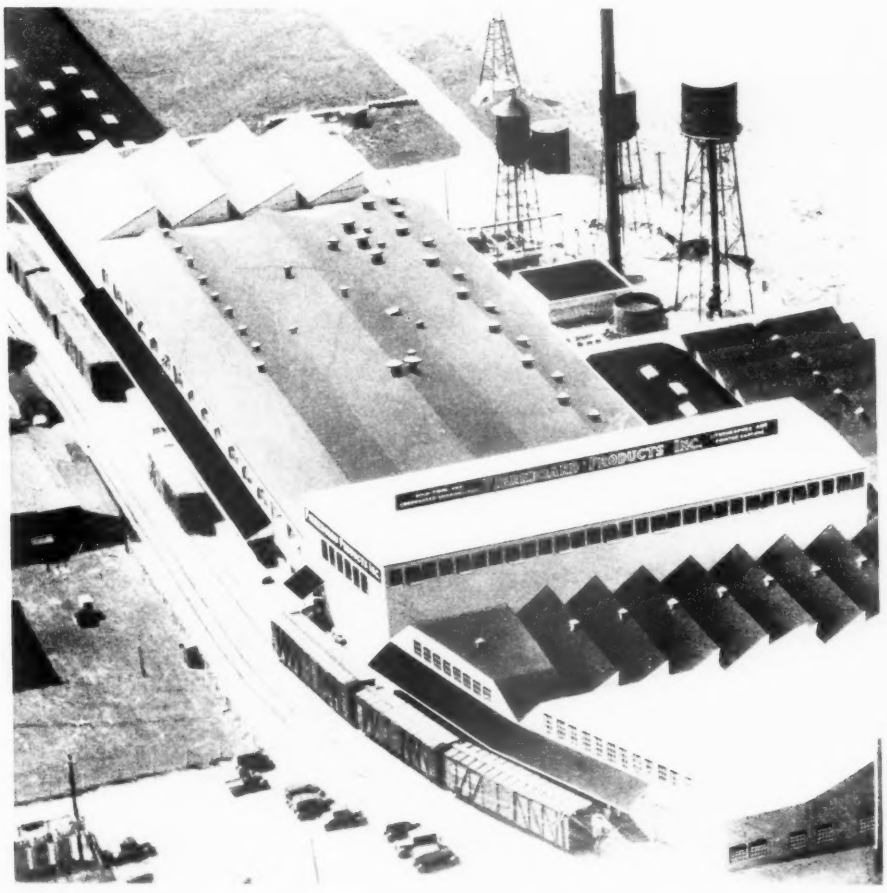


The Board and Container Plant of Fibreboard Products, Inc., Sumner, Washington

MAY + 1931

LIQUID CHLORINE

TACOMA ELECTROCHEMICAL CO.
KEYSTONE BRAND
TACOMA, WASH.
SUBSIDIARY PENNSYLVANIA SALT MFG. COMPANY

ACIDS
ALUMS
ALUMINAS
CAUSTIC SODA
LIQUID CHLORINE
BLEACHING POWDER
GREENLAND KRYOLITH
SODIUM HYPOCHLORITE
AMMONIUM PERSULPHATE

THE distributing facilities of the Pennsylvania Salt Manufacturing Company besides being nation wide are highly specialized. Tank car equipment and containers are maintained in perfect condition to assure prompt service and safety to customers.

Liquid Chlorine and Caustic Soda are available the country over on short notice due to the strategic location of Penn Salt plants.

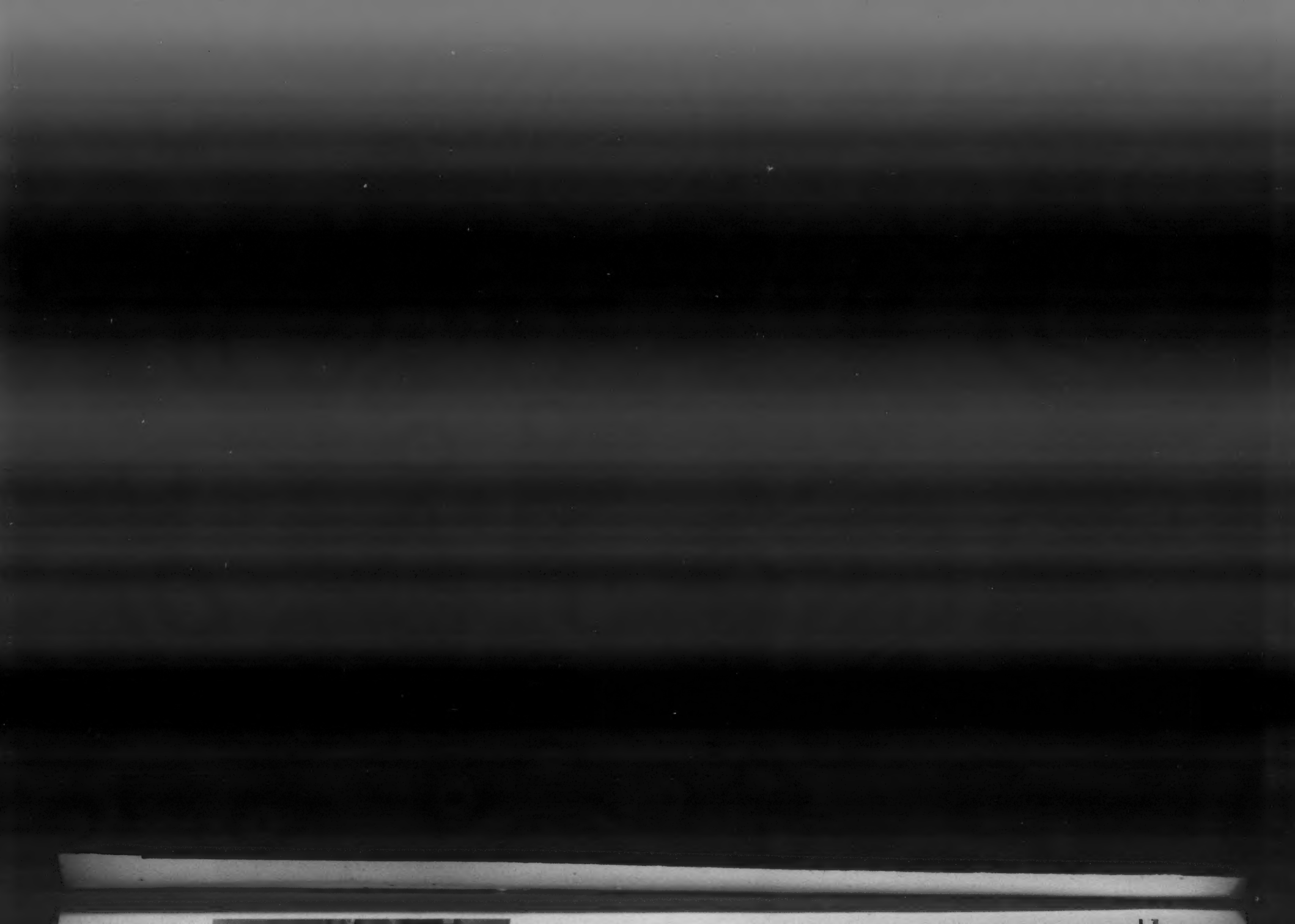
The carefully developed qualities of service which the Pennsylvania Salt Manufacturing Company has fostered have been added to the high quality of Tacoma Electrochemical Company Liquid Chlorine and Caustic Soda.

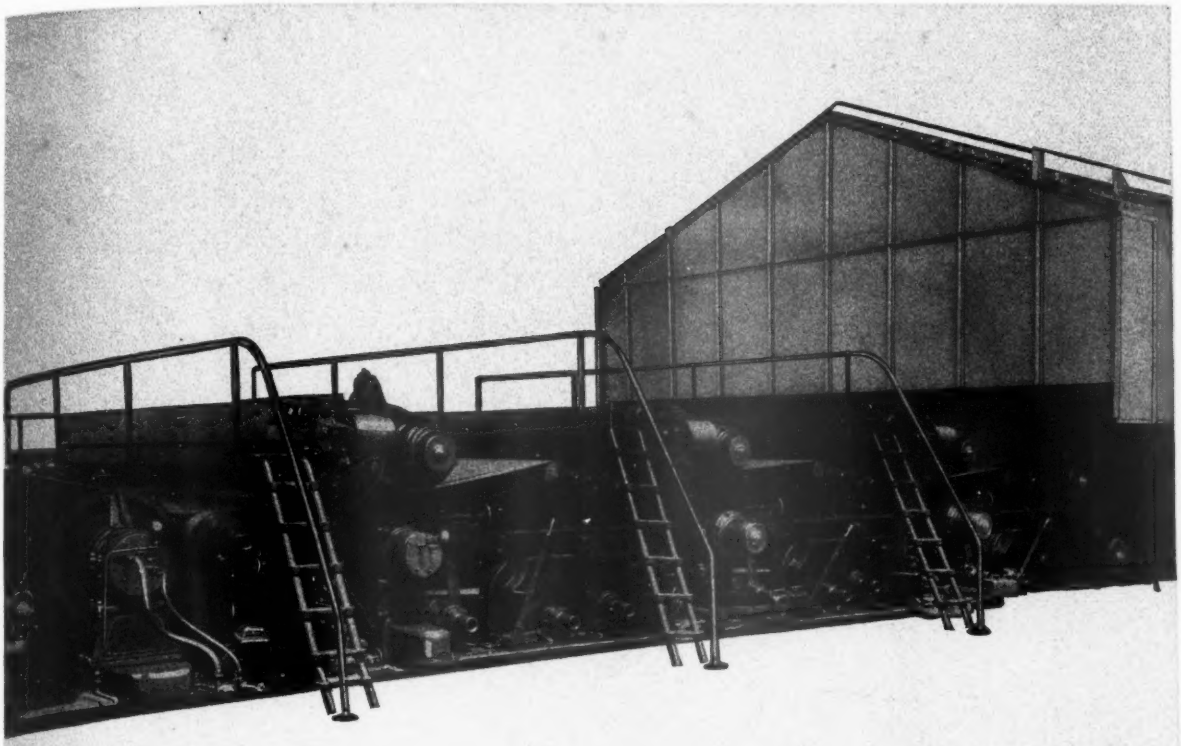
TACOMA ELECTROCHEMICAL COMPANY

TACOMA, WASHINGTON

WESTERN DIVISION OF PENNSYLVANIA SALT MANUFACTURING CO.

Pacific Pulp & Paper Industry is published once a month—except in March, when publication is semi-monthly—at 71 Columbia St., Seattle, Wash. Subscription: U. S. and Canada, $4.00; other countries, $5.00. Entered as second class matter May 20, 1927, at the Postoffice at Seattle, under the Act of March 3, 1879.





Install
A SUCTION PRESS ROLL *Now*

IN the past many mills have tried and abandoned, or have been reluctant to try suction press rolls, due to marking. Today, however, Improved Suction Rolls, proper design felt and top rolls have solved this problem. The modern press roll has been thoroughly established and accepted for making practically all grades of papers. Suction first press rolls in use by leading mills the country over have definitely proved themselves indispensable in safer running and prevention of pick-ups. By decreasing moisture-content going to dryers, less steam is required for drying. Appreciable increases in production and a lowering of operating costs are further benefits.

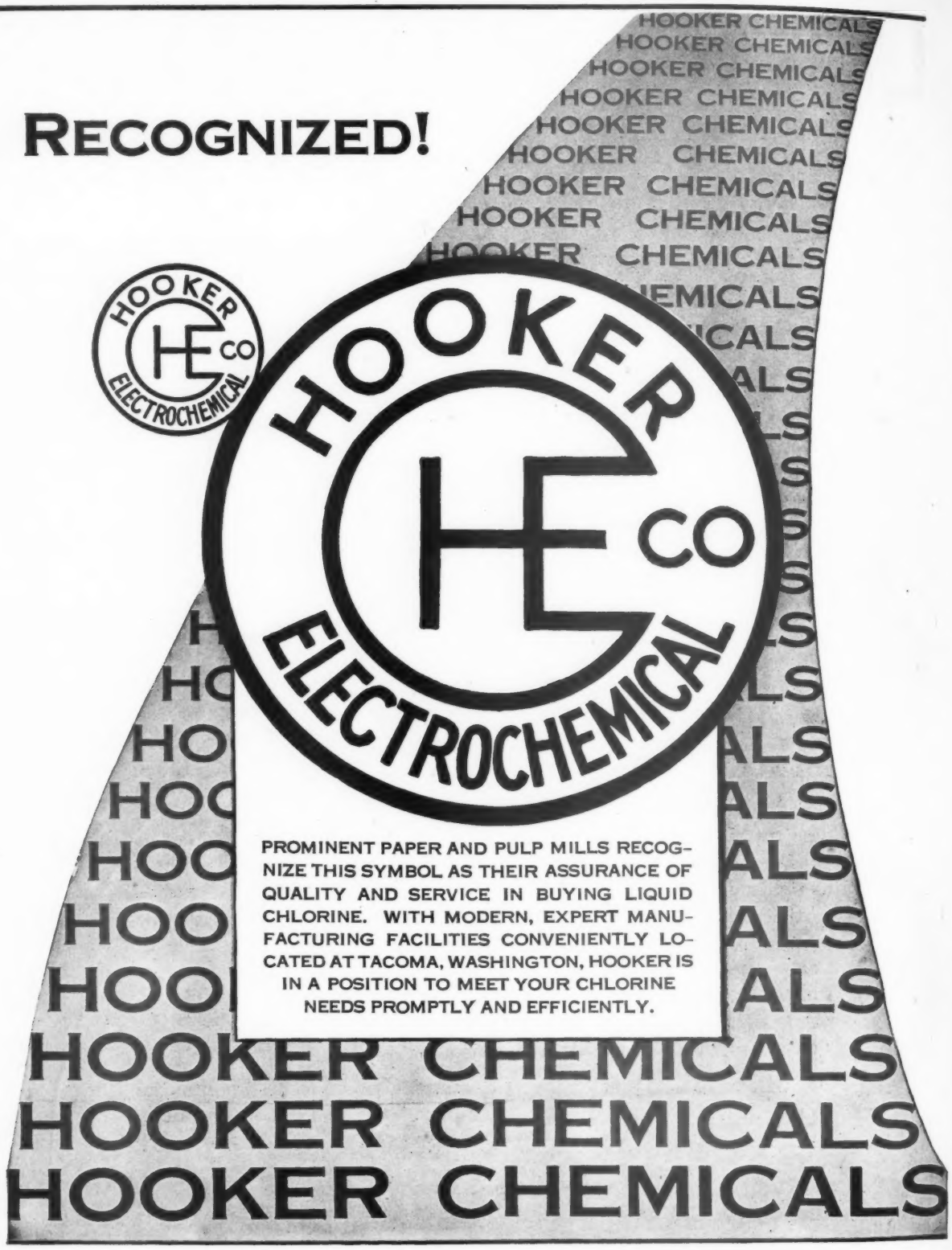
It will pay you to investigate the many advantages of this modern method of papermaking. A letter brings you the details and data.

The *Beloit* Way is the *Modern* Way

BELOIT IRON WORKS, BELOIT, WIS., U. S. A.

The BELOIT

RECOGNIZED!



PROMINENT PAPER AND PULP MILLS RECOGNIZE THIS SYMBOL AS THEIR ASSURANCE OF QUALITY AND SERVICE IN BUYING LIQUID CHLORINE. WITH MODERN, EXPERT MANUFACTURING FACILITIES CONVENIENTLY LOCATED AT TACOMA, WASHINGTON, HOOKER IS IN A POSITION TO MEET YOUR CHLORINE NEEDS PROMPTLY AND EFFICIENTLY.

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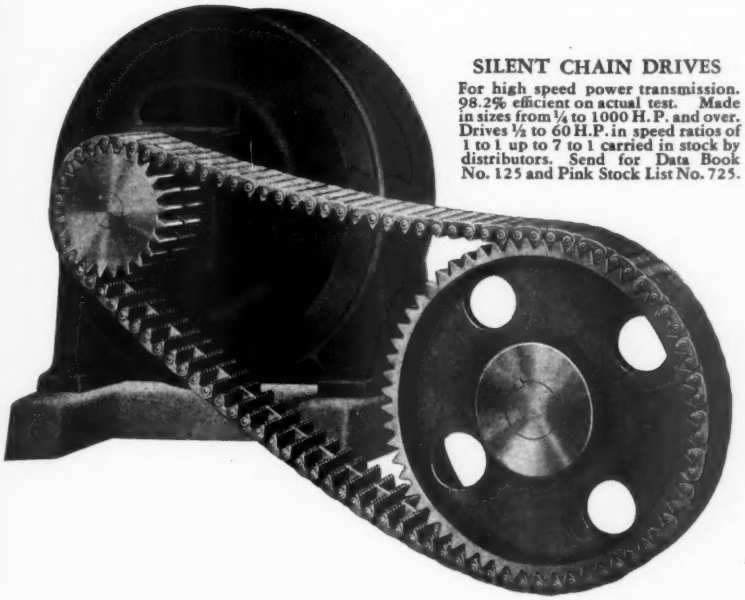
— *from Stock*

LINK-BELT Silent Chain and Roller Chain Drives for the efficient and positive transmission of power can be obtained from stock, nationally.



SILENT CHAIN DRIVES

For high speed power transmission. 98.2% efficient on actual test. Made in sizes from ¼ to 1000 H. P. and over. Drives ½ to 60 H.P. in speed ratios of 1 to 1 up to 7 to 1 carried in stock by distributors. Send for Data Book No. 125 and Pink Stock List No. 725.

ROLLER CHAIN DRIVES

For moderately high speed power transmission. Next in efficiency to Link-Belt Silent Chain. Drives up to 100 H. P. and over, in speed ratios of 1 to 1 up to 6¼ to 1 carried in stock by distributors. Send for Data Book No. 1257 and Green Stock List 1357.

Tried and proved in practically every character of service, these two types of drives are specified and bought today by the experienced users of power transmitting equipment. These drives are easy to install—are exceptionally long lived. They are not affected by atmospheric conditions, and they do not deteriorate when not in use.

Whatever your needs in power transmission may be, Link-Belt can help you solve your problem, and you can be certain that you are obtaining the drive that best meets your requirements.

A Link-Belt Positive Drive Specialist near you will give you unbiased advice as to the best type of drive for your particular needs. Send for catalogs.

Link-Belt Positive Drives

Include:—

Herringbone Gear Speed Reducers
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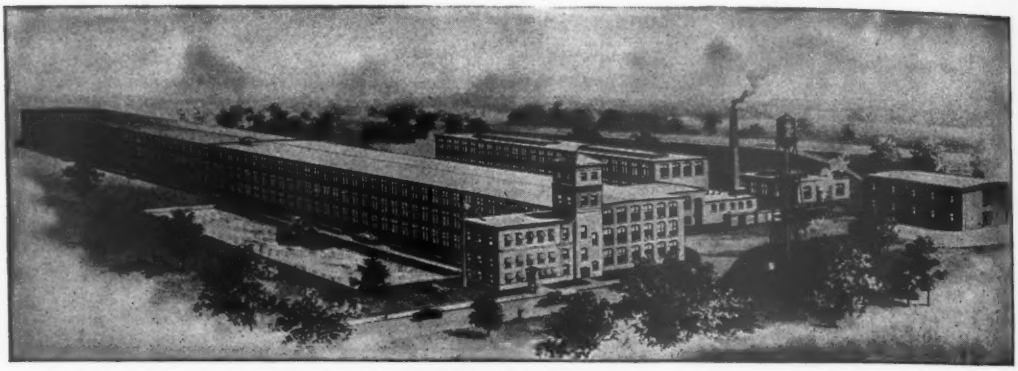


THE HOME OF ALBANY FELTS

PULP FELTS

While new developments in paper machines have been advancing at a rapid pace, machine builders have not overlooked any opportunity to improve pulp equipment.

Albany has kept in close touch with every new development and constant study has led to the perfection of all sorts of felt designs for use on every type of pulp-making machine.

Special designs for dry machines . . . for Rogers machines . . . for ordinary wet machines . . . for Kamyr machines.

If you are interested in improved felt-life and water-removal on your pulp machines, we suggest that you give us the opportunity of demonstrating what we can do for you.

ALBANY FELT COMPANY

ALBANY, NEW YORK

When writing ALBANY FELT CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

CLEAN Screened Stock ... and Plenty Of It ...

Obviously, the ideal way to assure clean stock is with the minimum of agitation after it enters the screen. Undue disturbance often forces through the slots dirt specks that ordinarily should float away.

The Harmon Inclined Screen,—the pioneer inclined type screen, built exclusively by Bagley & Sewall,—is designed and constructed to pass the maximum amount of *clean* stock, *without excessive disturbance or turbulence.* Its inclined plates promote the rapid, free flow of stock, with a positive current that floats dirt off at the low end, without rakers or showers. Special ground chilled cams, each operating an individual vacuum chamber, give a sharp, upward, slot-cleaning blast and a s-l-o-w downward draw that brings through the maximum amount of stock. Stock keeps moving, without plugging or overflow, and *without supplemental agitation.*

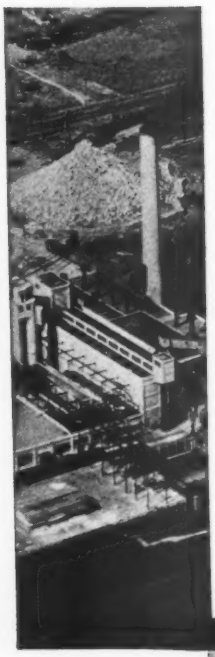
Its unusually large, non-clogging screening capacity and positive action permit the use of finer-than-usual plates,—another deterrent to the passage of dirt. Actual experience, in mills that measure efficiency by quality as well as quantity, has proven that the Harmon Inclined Screen delivers more and cleaner stock at lower upkeep and power cost than any other type of diaphragm screen.

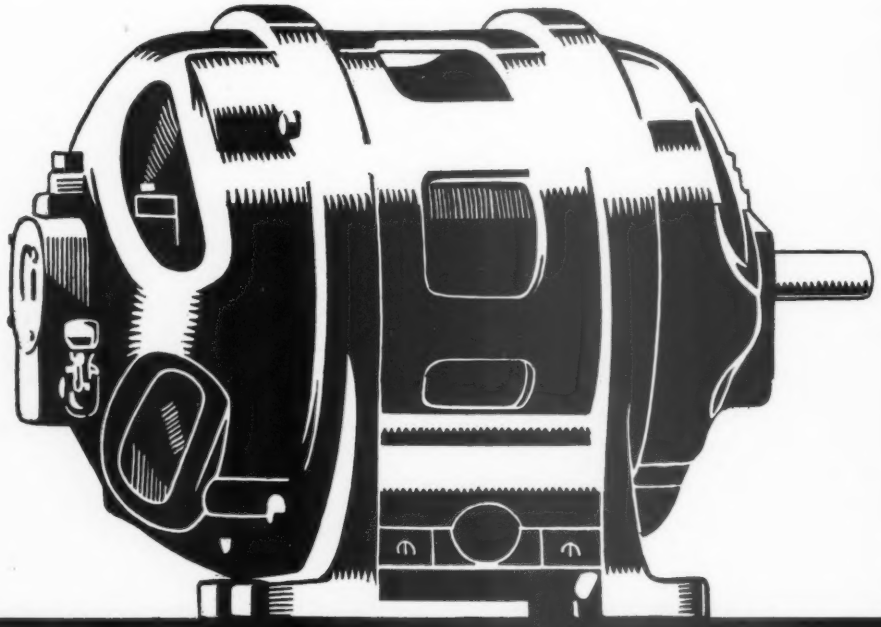
We'd like to tell you more about it,—write us.

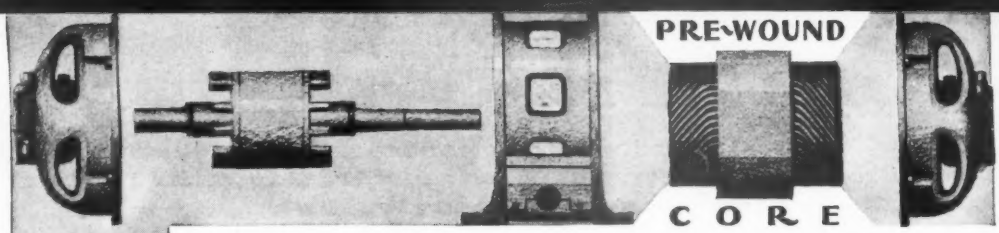
The Bagley & Sewall Co.

50 Watertown, N.Y.

A NEW MOTOR







NEW SPEED OF REPAIR—Motors can be repaired in far less time because of the renewable Pre-wound Core. Press out a damaged core, press in a new one and the motor is back in service within an hour.

NEW ECONOMY IN SPARE PARTS STOCKS—Now, it takes only a few Pre-wound Cores to provide the same assurance of uninterrupted production as a large number of spare motors or spare frames. Pre-wound Cores are the same for both standard and for so-called "special" designs.

NEW INTERCHANGEABILITY OF PARTS—Easy change of mechanical construction and speed characteristics of motors is now possible by users. The Pre-wound Core is interchangeable as well as renewable on all motors of the same rating regardless of mechanical form.

NEW STANDARDS OF RIGIDITY—All motor frames, whether used for standard horizontal, vertical or side mounting motors, are of a rigid non-sag design. Bearings remain permanently in line and the air gap is unchanging.

to help the men who make Paper

TO MEET the growing demand of the Paper Industry for a Thrifty Motor, Westinghouse presents a general purpose squirrel cage motor whose construction is based on a new and unique principle—the electrical part containing the motor windings is a unit separate and distinct from the mechanical parts.

The electrical unit, called the Pre-wound Core, is renewable in all motor ratings, thus bringing to the Paper Industry a new device for reducing production losses due to motor shut-downs, and for the better maintenance of production schedules.

Just as the introduction of the automatically regulated sectional paper machine drive in 1919 by the Westinghouse Company was an outstanding improvement, similarly this new general purpose squirrel cage motor represents the most notable advance made in induction motor construction during the past decade.

Wire, 'phone or write the nearest Westinghouse office for additional information about the Thrifty Motor that writes a new chapter in the history of motor drive for the Paper Industry.

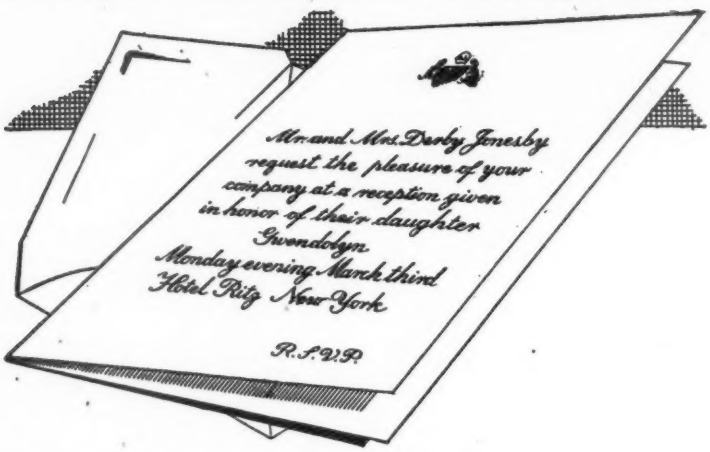
Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

T 31714

TUNE IN THE WESTINGHOUSE PROGRAM OVER KDKA, KYW, WBZ AND ASSOCIATED N. B. C. STATIONS SUNDAY EVENINGS.

FINE PAPERS REQUIRE THE ADDED REFINEMENTS IN KENWOOD TANNED FELTS



The new Kenwood Fine Paper Felts provide distinct advantages in surface, in openness, in strength and in long life. Smooth in finish and smooth in operation, they provide new uniformity and dependability, making it easier to maintain higher standards and aiding in the elimination of broke. The qualities that signalize the superior performance of Kenwood Fine Felts are attributable to the Kenwood policy of progressive, scientific development.

KENWOOD WOOL PRODUCTS

Kenwood pioneered the one-sided board felt. The same research service developed the patented tanning processes which protect the felt from the deteriorating effects of acids. A third contribution is the new method of yarn construction which, while not adding to the weight or size of the yarn, provides greater openness and increased strength in the felt.

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, N. Y.

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KENWOOD FELTS

WILLIAMS STANDARD PAPER MOISTURE TESTER

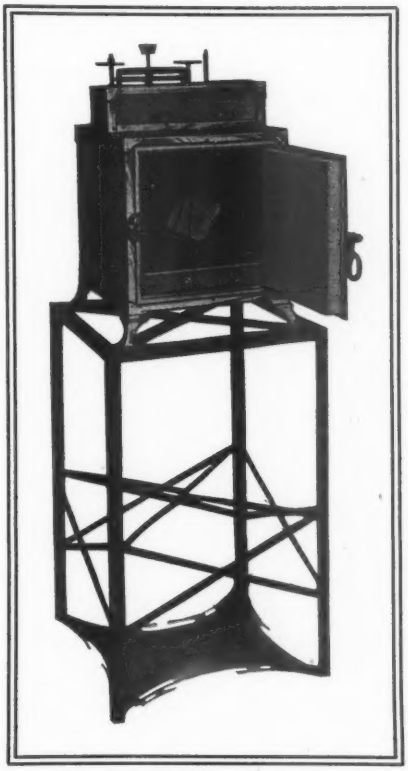
An Accurate Moisture Test of Your Paper in Ten Minutes

One Paper Company Has Bought 21 for Their Various Mills

Moisture tests can be made in your Machine Room by your Machine Tenders.

No calculations required. Accurate to .1 of 1%.

Tests all kinds of paper from tissue to board.



Hot samples weighed without removal from oven. No chance for moisture absorption during weighing.

Double-walled electric drying oven, with thermostat control.

Accurate scales with non-rusting agate bearings and beam graduated to read percent moisture directly.

Over-dried Paper Costs You More Dollars Per Ton and Dissatisfied Customers

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WATERTOWN, N. Y.

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Satisfactory Service!

at Your Command

PAPER MILL MACHINERY

For Your Particular Requirements

The Undercut Trimmer

An Automatic Clamping Cutter, conceded the BEST Trimmer for THE PAPER MILL, replacing other makes of cutters where accuracy and strength are a factor in efficient production with minimum cost of maintenance. Equipped with motor or pulley drive, and safety starting device as desired.

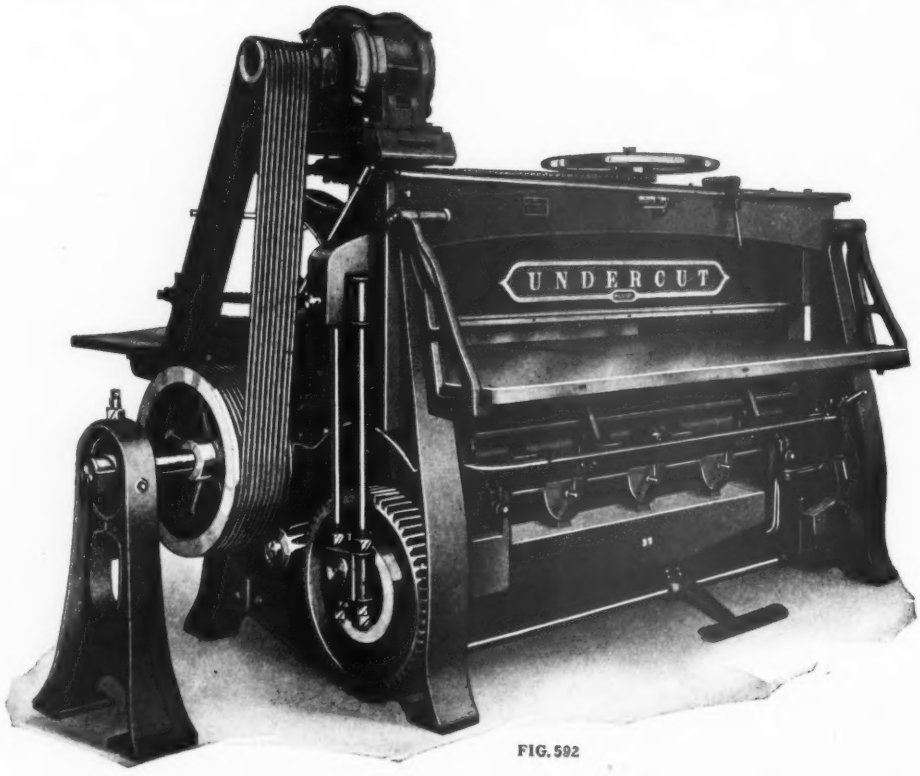
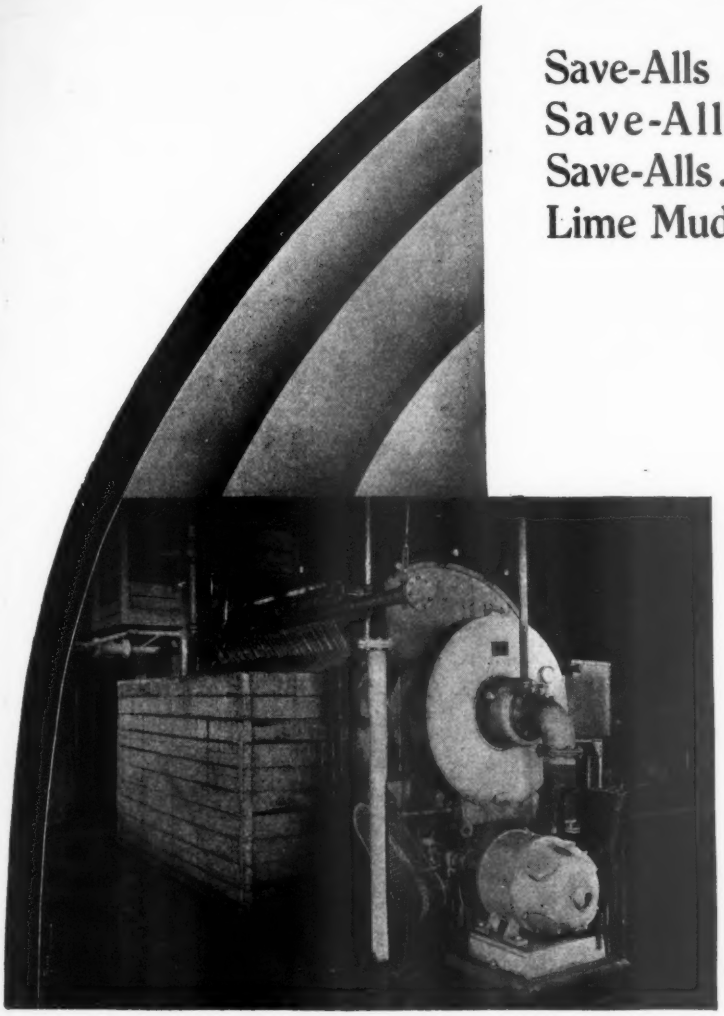


FIG. 592

THE SMITH & WINCHESTER MFG. CO.

Dept. MFP, SOUTH WINDHAM, CONN.

— PAPER BAG MAKING MACHINERY —



Save-Alls . . . Deckers . . . Decker
Save-Alls . . . Decker Washer
Save-Alls . . . Brown Stock Washers
Lime Mud Filters

Comprising 20 Units

Six Months Orders for Oliver Units

- - - from Just - - -

One Section of the Country

SEVEN different mills placed these orders —evidence of the growing popularity of Oliver United filters.

Six different types of filters are involved—evidence of the diversity of types available.

The pulp or paper mill planning to modernize its plant can find the units needed in the Oliver United group.

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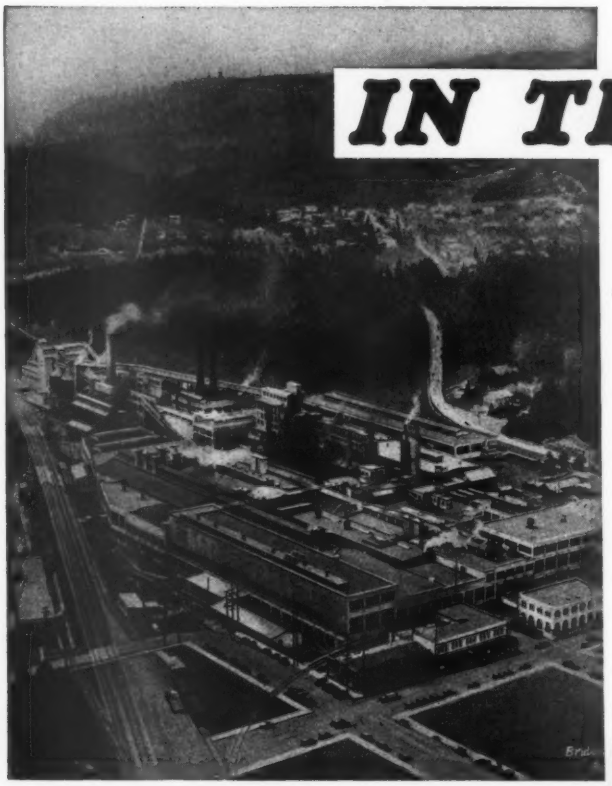


IN THE NEW

Crown Willamette Plant –

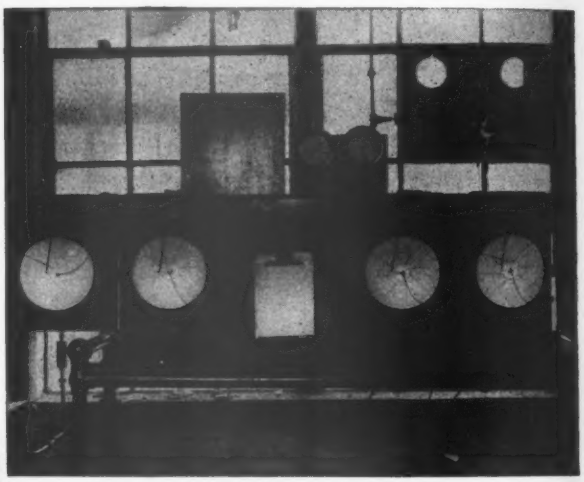
. . . digesters are held constantly to pre-determined schedules of temperature and pressure . . . beaters are precisely controlled from start to finish—UNDER DIRECTION OF BRISTOL'S RECORDING INSTRUMENT EQUIPMENT.

The consistently uniform quality of pulp, and high-speed, low-cost production attained under such control serve to again emphasize the important part which dependable instruments have come to occupy in economical mill operation.

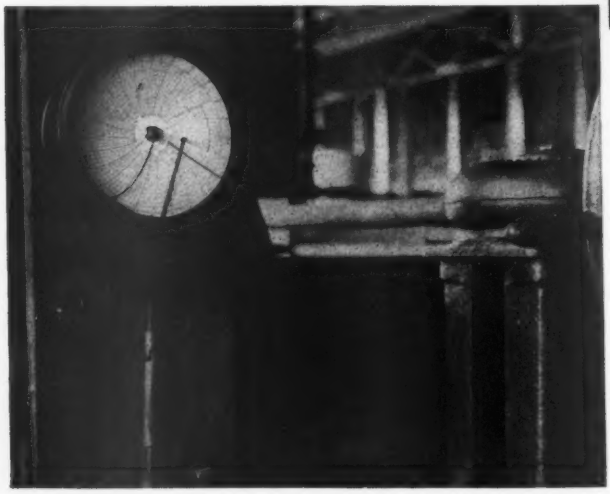
Why not make a survey of instrument possibilities in your own plant? Bristol's Field Service Engineers

Air view of new Crown-Willamette Paper Company plant, Camas, Wash.

At right—Group of three Recording Thermometers and one Recording Pressure Gauge installed to provide continuous, automatic check on digester temperatures and pressures.



Below—Continuous operating records provided by this Bristol's Recorder guide workmen in successfully duplicating specified beating schedules; also show foreman or superintendent how closely such schedule was followed out. Seven other beaters in the Crown-Willamette plant are similarly equipped.



will be pleased to assist you in any way possible—without obligating you in any way.

For detailed information about Bristol's Instruments, or request for engineering counsel write The Bristol Company, Waterbury, Conn., or nearest Bristol's Branch Office.

BRANCH OFFICES:

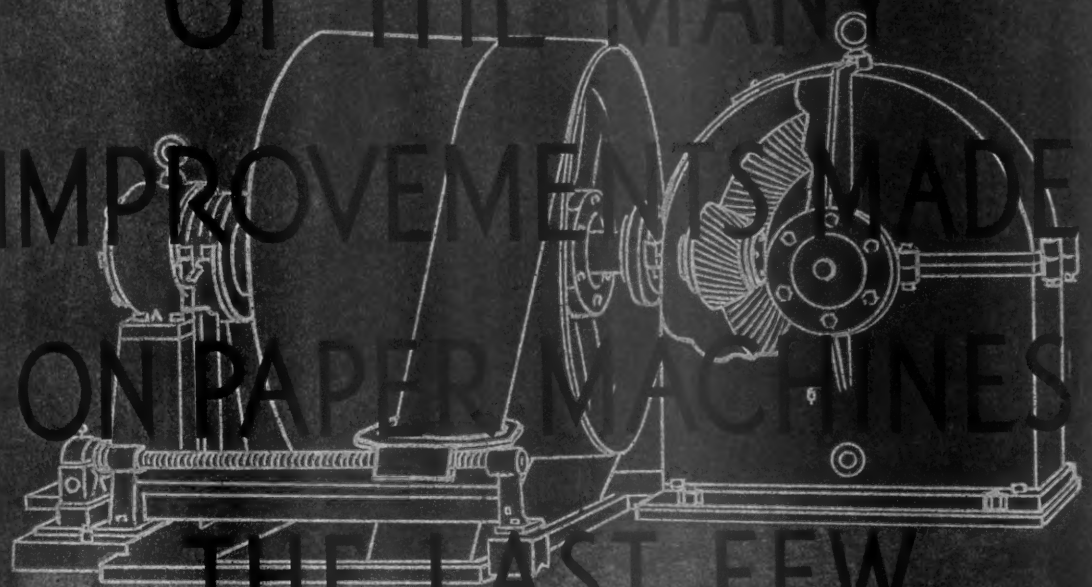
Boston, New York, Philadelphia, Pittsburgh, Birmingham, Akron, Los Angeles, San Francisco, Detroit, Denver, St. Louis, Chicago

BRISTOL'S

SINCE 1889

Instruments for Indicating Recording Controlling

DO YOU KNOW
OF THE MANY
IMPROVEMENTS MADE
ON PAPER MACHINES
THE LAST FEW
YEARS?



RICE, BARTON & FALES
INCORPORATED
WORCESTER, MASSACHUSETTS, U. S. A.
Paper Making Machinery Since 1837

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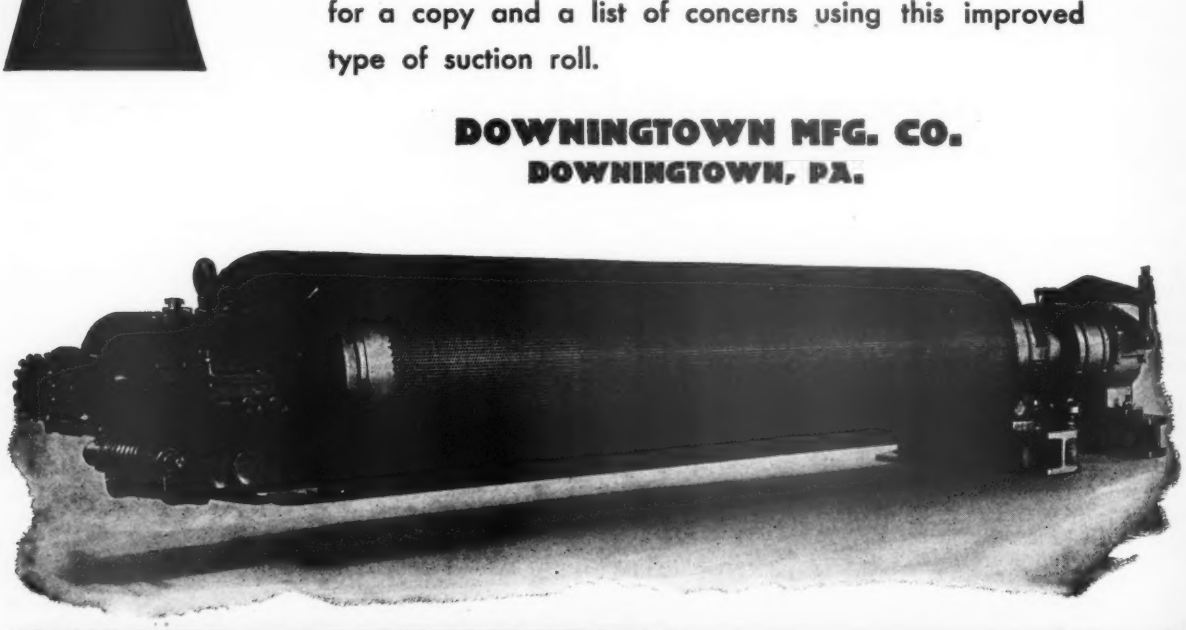
Downingtown Suction Rolls are built in both Cantilever and Standard Types, with suction pump connection on either front or rear. All rolls are fully adjustable while running. This includes the packing strip adjustment, deckle adjustment and adjustment of angular position of the suction box. Furthermore, when the roll is idle, the packing strips can be removed through ports in the end heads, without removing the suction box, or dismantling the roll in any way. A complete description of the Downingtown Suction Roll and its advantages is contained in our Catalog 103. Write us for a copy and a list of concerns using this improved type of suction roll.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA.



Tycos Instruments for Pulp and Paper Manufacture

Watching Beater Temperature Means Better Stock » » »

TEMPERATURE plays an important part in the reaction between the pulp and the various materials blended in the beater. There is a stock temperature suited for obtaining the best results with free size, neutral size, American clay, British clay, alum, starch, direct dyes, acid dyes or basic dyes.

Each mill has its own particular problem to handle. Local conditions as to water used and other variables must be considered. Temperature is not the only factor but an important one . . . one that should not be disregarded when the valuable contents of a beater are at stake. *Tycos* Recording Thermometers have shown that they can assist the beater engineer in producing uniformly sized and colored stock.

There are *Tycos* Recording Thermometers to fit the range of every beating operation, giving the operator a reliable record of stock temperature throughout the beating cycle and furnishing the mill superintendent with a complete picture of each day's work, showing temperatures maintained, length of beating cycles and time required for filling.

Taylor Instrument Companies

Rochester, N. Y., U. S. A.

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SHORT & MASON, LTD.
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Tycos Recording Thermometer, shown on a beater in a Northern paper mill, where it gives the mill manager an accurate history of beating operation each day. The beater engineer can tell from the Tycos Chart when each beater was furnished and approximately when it should be dumped. We will send reproductions of charts from this instrument on request.

Send for a *Tycos* Catalog

- Clip
- And Mail
- This Coupon

Taylor Instrument Companies
95 Ames Street
Rochester, New York

Please send a copy of your Catalog Part 6 for the Pulp and Paper Industry to:

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THE TEXTILE-FINISHING MACHINERY CO.

Another prominent user of **SKF** *Bearings in the Paper Industry*

Where PERFORMANCE TAKES PREFERENCE over PRICE

BIG JOBS PLUS PRECISION AND TEXTILE USES SKF

SIXTEEN SKF Ball Bearings are on this 9-roll Textile Super Calender for a definite reason . . . *dependable performance.* Here we meet with the demand for steady service, uniform pressure and output plus the need of cleanliness. All these factors are fully met by the SKF Bearings on the 150" rolls.

Not only by their long life and ruggedness are SKF Bearings ideal for such giant applications. Outstanding is the fact that they never require adjustments. This feature materially assists in maintaining production to a definite standard of quality...continuously. Smooth running, no lubricant leakage and a minimum of maintenance round out the performance story of SKF.

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PACIFIC PULP and PAPER INDUSTRY

SUBSCRIPTION RATES
United States and Canada....$4.00
Other Countries $5.00
Single Copies .....$ .35

VOLUME V MAY, 1931 NUMBER 6

MILLER FREEMAN, President
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THE PACIFIC COAST JOURNAL FOR PRODUCERS, CONVERTERS, AND DISTRIBUTORS OF PULP, PAPER, AND BOARD.

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Co-operation in Industry

Is Keynote of Discussion

at Del Monte Convention

EXPRESSED in the language of the theatre, the theme song of the fourteenth annual convention of the Pacific States Paper Trade Association was "Cooperation." Del Monte, with its lovely surroundings, its clear sunshine, its cool breezes directly off the wide expanse of the Pacific Ocean, its almost countless golf courses, is a good place to breed fellowship. Thus, with times not all they have been, with every man having his problems, it was not difficult to find a communion of interests to discuss in the rooms of the famous Del Monte hotel.

George I. Tompkins, Sierra Paper Co., Los Angeles, Elected President PACIFIC STATES PAPER TRADES ASSOCIATION

This year there was direct admission that times were difficult and that many problems had been created, but thru it all there permeated a definite atmosphere that the best way out of all difficulties lay in hearty cooperation between competitive interests in the field. In other words, the real competitor is the best competitor, because you can talk sense to him.

Attendance this year was a bit smaller than usual, but interest was not lacking.

President E. A. Doran aroused a great deal of admiration at the convention for his unselfish work in putting the program thru in business like order despite a physical handicap. He got out of a sickbed on Wednesday to attend the convention. He expedited the program and kept the delegates to their work so that by Friday events were far ahead of schedule. Following are some of the topics discussed.

M. B. Olmsted, Zellerbach Paper Co., gave a brief report on the Mill Relations Committee — Fine and Wrapping.

In the absence of E. A. Breyman, his report on the Committee on Cost of Deliveries was read by another member. Progress was reported, but no statistics were available.

F. C. Stratford, Zellerbach Paper Co., reported for the Committee on Uniform Method of Merchandising.

W. B. Reynolds, General Paper Co., reported for the Committee of Skid Packing, saying that the skid method of shipment was growing in favor. This was a continuation of the subject which was discussed in considerable detail last year.

H. L. Zellerbach, Zellerbach Paper Co., reported for the Committee on Simplification of Printing and Wrapping Papers.

Under the head of new business L. A. Colton, Zellerbach Paper Co., brought events down to date by reciting "what did the 1930 convention do?" He pointed out accomplishments and at the same time some intended accomplishments which have not materialized.

One discussion which drew an unusual share of interest was "The Work of the Credits and Terms Committee and the Present Status of the Plan," by George I. Tompkins, Sierra Paper Co., Los Angeles. Under this head it was evident that the jobbers were making a determined effort to correct a number of credit abuses which have been developing. In other words, effort is being made "to get out of the banking business and back to straight merchandising."

Mason Olmsted, in Mr. E. A. Breyman's absence, read a paper on "Pacific States Association Sales Statistics—Their Significance and Value." This paper was commented upon as one of the most carefully thought out of the entire program. Briefly, Mr. Breyman pointed out in this paper that present methods of correlating statistics are erroneous and misleading. He suggested an alternative method which would give real information on the trends in business without in any way revealing the operations of individual organizations.

A. W. Blackman Talks

The subject of "Combined Deliveries," after some discussion, went back to the program committee for further study.

Mr. A. W. Towne, Blake, Moffitt and Towne, gave a well prepared discussion on Duplication of Lines and Consequent Increase of Merchandise Investment Without Satisfactory Sales Returns.

A highlight of the entire program was the address by A. W. Blackman of Boston, president of the National Paper Trade Association, on Net Profit Control. This is a favorite subject with Mr. Blackman and his

thoro knowledge of the subject, together with his adroit methods of expressing himself, put the paper over in a most effective way. It is safe to say that all the jobbers present will remember his little blue bottle with its lesson on the "elixir of life."

The Northern members of the Paper Trade conference were very few this year and made as one plea for their non-attendance the time and money involved in coming such a great distance to Del Monte every year. In other words there was a mild revolt on the part of the northern members and, while they agree Del Monte is an excellent convention place, they feel they bear an excessive portion of the burden in having to travel the farthest each year. Their contention is that about one convention in three ought to be held in the Northwest. As a partial concession to this "revolt" it was agreed this year that a Northwest regional meeting will be held in the fall at which time the Association president and secretary will be in attendance.

Doran Opens Joint Meeting

AS customary, the fourteenth annual convention of the Pacific States Paper Trade Association opened officially with the joint meeting of manufacturers and merchants, on Wednesday evening. President E. A. Doran presided. He prefaced the session with remarks on the troublesome nature of the year just passed but said that in reality the real depression had been felt on the Pacific Coast only during the last six months.

"While it seems severe to us," he said, "it is nothing to the nearly two years of depression which has jolted the Eastern people."

Mr. Doran pointed out that cooperation between merchants and manufacturers on the Pacific Coast had made the burden much lighter. Mr. Doran said that while the end was not yet in sight, he hoped that both merchants and manufacturers would continue their cooperative attitude during these trying times and not get panic-stricken, nor attempt to discover innovations designed to capture 100% of the business. He urged the membership to scrutinize closely any radical change that might occur on ways and means of getting more business.

E. F. Herrlinger, president of the Gummed Products Company, Troy, Ohio, said that business had been like an individual recovering from a long illness, getting up for two or three hours and then going back to bed again for a week. He cited previous business depressions from 1837 on and said that "none of these compare with the beautiful nose dive we took in October, 1929. We had been on a business spree which began with the war and something had to happen. But all we need to do is sit tight and we will come out all right."

The Manufacturers Association

George W. Houk, Hawley Pulp and Paper Company, and president of the Pacific Coast Association of Pulp and Paper Manufacturers, gave a concise report of the organization of that body and its aims.

"For the manufacturers I should like to say that we have some well defined purposes," said Mr. Houk. "We feel that we can develop and safeguard our common interests on the Coast by such an organization as we have created, permitting the membership to solve by joint consideration problems of common interest such as legislation, both federal and state, taxation, tariff, trades, customs and practices, analysis of raw materials, costs, traffic problems, waste utilization and research, safety, and new markets."

As specific examples Mr. Houk mentioned problems of current interest involving the state industrial accident commission in Oregon. By cooperative effort between mills in this field of safety the manufacturers have stepped beyond the capablities of the state commission that might lead to the establishment of their own hospital protection plans or force the state into giving a lower rate.

Mr. Houk pointed out that research work was being handled by TAPPI which is, of course, a part of the American Paper and Pulp Association and a function in which much enthusiasm was being shown and with which the manufacturers were cooperating.

Sidney L. Willson Speaks

President Sydney L. Willson, president of the American Writing Paper Company, and one of the best known figures in the paper industry because of his tenure as president of the American Paper and Pulp Association, gave a stated address on "the price curve," in which he pointed out that mass thought functions more readily when depressions exist and at times seems to preclude clear and logical thought and sane action, creating a suspicion of optimistic opinions even when based upon known, supporting facts.

Mr. Willson quoted the law of supply and demand, the ill effects of applying the law of the jungle, and advocated sane industrialism by intelligent application of facts.

Analysis of present increased cost of raw materials, wages and overhead would show these items to be entirely out of line with present selling prices of the finished paper and board products.

"We have seen during the past year a lot of foolish moves made in the price structure for paper—the law of the jungle. We know, under the present national laws, price agreements cannot be entered into, but if the laws of common sense and common rights are properly applied, thru the application of common cost facts and data obtained thru association activities, better prices are possible without violation of any national law."

Mr. Willson hazarded a guess that a noticeable improvement would materialize late in the fall with a steady upward curve in business during 1932.

In the course of the evening President Doran called upon a number for spontaneous remarks.

The first to respond was I. Zellerbach who said

1931 OFFICERS
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George I. Tompkins, Sierra Paper Co., Los Angeles.

Executive 1st Vice-President

Harold L. Zellerbach, Zellerbach Paper Company, San Francisco.

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C. H. Fricke, Taverner & Fricke, Los Angeles.
A. W. Towne, Blake, Moffitt & Towne, San Francisco.

Secretary-Treasurer

H. Arthur Dunn, San Francisco.

tersely, "The trouble with most industries is that we are too prone to think of ourselves instead of in terms of the industry. Where individuals work together, practically as one, you find a profitable industry. Thru cooperation between merchants and manufacturers we have been able to stabilize conditions to a better degree than has been done in the East.

"To show the respect Eastern manufacturers have for the Pacific Coast I mention my participation in the formation of the Kraft Paper Institute in St. Louis six weeks ago, a move carried on unselfishly by people who, I had heard it said, could not be brought into an association or to think in terms of association work. We stayed there four days and sat up until two o'clock in the morning."

Visitors Express Opinions

David King Brown of the Neenah Paper Company, responding as a first time visitor to Del Monte, expressed great belief in association work. He expressed admiration for the cooperative spirit shown on the Coast and said that in their own group, the Writing Paper Manufacturers Association, they believed in operating under the laws of common sense, and were not worried about running four and five day weeks when they knew their competitors were doing the same.

"I spend half my life on the other side of the water, and if this is depression, I must say it is better than prosperity on the other side."

Mr. Brown cited evidence of cooperation and quoted an example where Wisconsin mills had worked out legislative problems by simply talking over things with the governor.

President Doran next introduced William C. Wing of the Fox River Paper Company who said, "When we get over this disliking our competitor and have some confidence in him, then we are all going to get somewhere in our business. Maintain cooperation above all else. Why let the entire structure be weakened by a few stones that will not support?"

President Doran broke custom which keeps the merchants in their seats on the opening joint meeting by calling upon a distinguished guest, A. W. Blackman, president of the National Paper Trade Association.

Mr. Blackman said that never have relations between manufacturers and merchants been so friendly as today. He talked at some length on efforts of the national association to standardize cost systems.

M. R. Higgins pointed out progress of the cooperative spirit on the Coast from an initial meeting fifteen years ago of four men, developing in time to the present well-attended session.

Manufacturers Hold Own Meeting

THIS year for the first time the manufacturers held their own official meeting. Growing out of custom and then a committee appointed in 1930, the Pacific Coast Association of Pulp and Paper Manufacturers was officially organized during the past twelve months. The meeting at Del Monte this year was held on Saturday morning. It was fairly brief, but constructive in character.

An election was held and the entire slate returned to office. The officers are, George W. Houk, Hawley Pulp & Paper Co., president; Ossian Anderson, Puget Sound Pulp & Timber Co., vice-president secretary-treasurer — open for later appointment, with J. L. Murray of the Everett Pulp & Paper Co., temporarily continuing. There are also four others on the executive committee, to-wit: F. W. Leadbetter, Columbia River Paper Co.; R. A. McDonald, Crown Zellerbach Corporation; Max Oberdorfer, St. Helens Pulp & Paper Co.; and J. L. Murray.

It was decided to hold the annual meeting of the manufacturers' association in connection with the annual meeting of the paper distributors. Other meetings are subject to call, according to demand of special occasions in which conference would be desirable. Call meetings will be held in Portland, due to the greater number of meetings centering about the Northern territory.

In the floor discussions the accomplishments of the association so far were brought out, among them being the killing of a stream pollution bill which suddenly popped up in the Oregon State Legislature last year and which threatened to work an uncalled hardship on the industry. In this connection a brief paper was read, prepared by Max Oberdorfer, in which several instances of stream pollution troubles were cited. Mr. Oberdorfer said in part: "Dependence upon undirected legislation is often a disastrous procedure. . . . Any necessary legislation should be directed by the state officials in conjunction with representatives of all concerned."

Russian Pulpwood

Mr. Houk's paper on the question of importation of Russian pulpwood was well received and invoked considerable discussion. Some question of the attitude of the American Paper & Pulp Association was raised. One of the Eastern manufacturers present pointed out that President S. L. Willson's denunciation of the imports at the annual meeting of the association last February in New York was virtually an official statement, but it was not clearly felt, nevertheless, that the national body had taken a clear cut stand on the issue.

Mr. Houk pointed out in his address that for the Treasury Department to continue to permit Russian pulpwood importations was to prolong the period of over-production of pulp and paper in the United States by enabling high cost mills to continue in production.

Mr. Houk made it clear that he was not recommending a policy to be followed by manufacturers, either on the West Coast, or in the country as a whole, that he was not making an expression of sectionalism, but was simply bringing out some fundamental aspects of the whole problem.

The chair appointed M. R. Higgins of the Crown Zellerbach Corporation to draw a resolution which will be submitted for vote at the next meeting. Conscientious thought on the subject in the meantime was urged upon the members.

In the discussion it was pointed out by some of the Eastern manufacturers present that their conduct with the government authorities had convinced them that the government was keenly alive to the question in many ways not evident to the casual observer.

Central Testing and Rating Bureau

There was much discussion on the matter of creating a central, neutral testing bureau for testing and rating pulps and papers. Sentiment seemed to be in favor of creating such a bureau, but the method of its organization and functioning is to be a matter for further study. Such a neutral bureau, it was felt, could serve a definite purpose and clear up many present misunderstandings.

Other topics coming up for discussion, but upon which no real action was taken, included unemployment and methods of handling, labor legislation, safety, etc.

GOLF PRIZES, DONORS AND WINNERS
CHAMPIONSHIP FLIGHT

WINNER, silver pitcher, by Pacific States Paper Trade Association, won by Andrew Christ.
RUNNER UP, half dozen demi tasse cups with stands, by Everett Pulp & Paper Co., won by Harold Zellerbach.
LOW GROSS, compote, by Western Waxed Paper Co., won by W. E. Taverner.
BEST NET, fruit bowl, by The Tissue Co., won by G. C. Wieman.

SECOND FLIGHT

WINNER, fruit bowl, by Crown Willamette Paper Co., won by W. J. McCormick.
RUNNER UP, cocktail shaker, by Graham Paper Co., won by M. R. Higgins.

THIRD FLIGHT

WINNER, pair compotes, Columbia River Paper Co., won by C. H. Fricke.
RUNNER UP, silver clock, by Inland Empire Paper Co., won by Otto W. Mielke.

DEFEATED EIGHT—FIRST FLIGHT

WINNER, coffee pot, by Pacific Coast Envelope Co., Div., won by F. C. Stratford.
RUNNER UP, fruit bowl, by American Writing Paper Co., won by Mason B. Olmsted.

DEFEATED EIGHT—SECOND FLIGHT

WINNER, cigarette box, by The Paterson Parchment Co., won by S. L. Willson.
RUNNER UP, fruit bowl, by George La Monte & Son., won by D. K. Brown.

GENTLEMEN'S APPROACHING AND PUTTING CONTEST

WINNER, half dozen silver cocktail cups, by Brown Co., Portland, Me., won by V. N. Savale.

LADIES' FIRST FLIGHT

WINNER, fruit bowl, by Martin Cantine Co., won by Mrs. W. J. Pilz.
RUNNER UP, vase, by Western Paper Converting Co., won by Mrs. R. A. McDonald.
LOW GROSS, quilt, California Cotton Mills Co., won by Mrs. Andrew Christ, Jr.
BEST NET, compote, by Rhinelander Paper Co., won by Mrs. W. D. McWaters.

LADIES' SECOND FLIGHT

WINNER, flower bowl, by Hawley Pulp and Paper Co., won by Mrs. V. N. Savale.
RUNNER UP, sandwich plate, by Fox River Paper Co., won by Mrs. F. C. Srtatford.

MIXED TWO BALL FOURSOME

This match was played with three couples tied with a net score of 68, as follows: Mrs. H. L. Zellerbach and Mr. W. R. Taverner, Mrs. Augustus ohnson and Mr. W. D. McWaters, Mrs. Andrew Christ, Jr., and Mr. G. C. Wieman. As Mrs. Andrew Christ has already won the low gross ladies' prize, and Mr. Wieman has won the low gross gentleman's prize, they are already eliminated. The result, therefore, stood between the other two couple. As the match is decided upon low net it was decided by the committee that the winner of the toss of the coin could select the prize she desired. This resulted in that Mrs. H. L. Zellerbach can have her choice of the two prizes put up for this contest. The winning prize in this event, sandwich plates, was donated by the Fibreboard Products, Inc. The runner-up prize, demi tasse cups, was donated by the S. D. Warren Co.

LADIES' PUTTING CONTEST

WINNER, silver tray, Grays Harbor Pulp & Paper Co., won by Mrs. J. Y. Baruh.

This was a very interesting contest in that Mrs. J. Y. Baruh and Mrs. R. A. McDonald tied with a 17. They were then in contest again, when the match was again tied with 17. Mrs. McDonald having won a previous prize, the prize goes to Mrs. J. Y. Baruh.

LADIES' AND GENTLEMEN'S BRIDGE TOURNAMENT

WINNERS, pair of compotes, donated by Milwaukee Lace Paper Co., won by Mr. and Mrs. W. D. McWaters.

The committee felt that it would be interesting to have this tournament, and it is, therefore pleasing to note how much interest was taken in the event. It was decided that this would be separate and apart from the golf tournament, so that with regard to the question of prizes this does not affect the golf tournament. This prize was won by two of the greatest bridge players that ever entered the Hotel Del Monte, namely, Mr. and Mrs. W. D. McWaters, of Portland.

THOSE WHO ATTENDED
Pacific States Paper Trade Association

Members

LOS ANGELES

Blake, Moffitt & Towne, F. M. Couch; Sierra Paper Co., G. I. Tompkins; Taverner & Fricke, W. E. Taverner and C. H. Fricke; Zellerbach Paper Co., Mr. and Mrs. J. Y. Baruh, V. E. Hecht and Miss Grace Hecht.

PORTLAND

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SAN FRANCISCO

Blake, Moffitt & Towne, Mr. and Mrs. E. A. Doran and Arthur W. Towne; Bonestell & Co., Charles Pritchard; General Paper Co., Mr. and Mrs. W. B. Reynolds; Pacific Coast Paper Co., T. A. O'Keefe; Zellerbach Paper Co., Mr. and Mrs. M. B. Olmsted, Mr. and Mrs. F. C. Stratford, Mr. and Mrs. H. L. Zellerbach, L. A. Colton, Mr. and Mrs. M. R. Higgins, Mr. and Mrs. I. Zellerbach, and Mrs. E. A. Breyman; Carter, Rice & Co., C. H. Beckwith.

SPOKANE

B. G. Ewing Paper Co., Mr. and Mrs. B. G. Ewing.

SECRETARIES

J. R. Coffman, Los Angeles; Mr. and Mrs. H. Arthur Dunn, San Francisco.

GUESTS

Mr. and Mrs. A. W. Blackman, Boston, president, National Paper Trade Assn.; M. M. Baruh, San Francisco; H. H. Zellerbach, San Francisco; H. Wahl, San Francisco; E. Saline, San Francisco; L. F. Byington and Mrs. A. B. Saroni.

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THE TISSUE CO., Saugerties, N. Y., D. L. Maxwell, Palo Alto, Cal.; WESTERN WAXED PAPER CO. of CALIFORNIA, Mr. and Mrs. Andrew Christ, Jr., Oakland, and G. C. Wieman, Los Angeles; Mr. and Mrs. S. M. Newmark, Los Angeles.

Buckley-Lynch Paper Company, Los Angeles, recently issued a new price book which is creating comment in the trade. The new book has listed in addition to the pound prices, the price per thousand sheets of every item carried in stock. Formerly the printer had to do quite a lot of figuring converting price per pound into thousand sheets. The new price list does away with this.

Buckley-Lynch Paper Company have added Adirondack Bond and Ledger to their lines. This recent addition is manufactured by the International Paper Company.

Bleaching Western Pulps*

By ROBERT B. WOLF
Manager, Pulp Division, Weyerhaeuser Timber Company
Formerly, President, Pulp Bleaching Corporation

Mr. Wolf has had perhaps a more varied experience than any other individual in the bleaching of Western pulps. In this paper he sums up some of the major problems and methods devised to develop pulp qualities from Western woods competitive with products of any other region.

INCREASING knowledge of the physical and chemical properties of pulp, and the part they play in paper-making, has brought about a demand for continually higher standards of quality. Recent economic factors also contributed to make consumers increasingly more critical in their evaluation of pulp and ever more exacting in their requirements. In the face of this situation, Pacific Coast sulphite made its appearance in the world market. It is not surprising, therefore, that its introduction into general paper-making use has been beset with difficulty.

From long experience, paper makers have become familiar with the properties of sulphite made in Eastern North America and Scandinavia. The western pulp manufacturer has for his raw material wood which shows some marked contrasts with those grown in these other areas. It has been demonstrated beyond argument that pulp having physical and chemical qualities equal and even superior to established Eastern grades can be made from Western woods. This is accomplished by exercising careful control of the process in every step of manufacture.

Three Factors

One department in which it is most necessary to have careful scientific control is the bleachery. It is not possible, unfortunately, to overcome in the bleachery very many shortcomings of improper procedure in the earlier stages of production, but it is quite possible to seriously injure in the bleachery an otherwise high grade of pulp. The various encrusting impurities, which we progressively remove from the fibre during the pulp making process, are, while present, a protection to the cellulose against chemical degradation. In the bleachery the very last traces of these impurities are being removed from the cellulose and care must be exercised at every step to avoid damage to its physical and chemical qualities.

In the bleaching of any pulp the factors of time, temperature, and concentration are intimately related, and both the quality and economy of the operation are largely determined by the balance between these factors.

If both temperature and concentration were kept low throughout the cycle, by a lavish expenditure of time, any sulphite pulp might be bleached with little danger of damage to the fibre. Such an operation, however, would not only require an enormous volumetric capacity of apparatus, and therefore be uneconomical, but the resulting product would not be clean, because the shives, or fibre bundles, containing organic dirt are not penetrated and bleached in dilute solution.

By raising the temperature, the time factor may be greatly reduced, but this incurs the danger of over oxidation and the penetration and bleaching out of shives is very little improved. Pulps bleached by a single-stage, low consistence process are notoriously dirty, even if otherwise of high quality, unless unusual and expensive precautions are resorted to in the selection and preparation of the wood and the screening of the unbleached pulp. Furthermore, the large amount of heat required in such a process is a factor of high cost.

Multi-Stage Bleaching

By increasing concentration to its practical limit, and keeping temperature low, the time factor can be reduced even more than with high temperature and low concentration. At the same time, by using properly designed apparatus to effect periodic intermittent agitation and inter-mixing of the bleach liquor and pulp, any danger of over oxidation is avoided and the very important result of penetrating and bleaching out shives and fibre bundles is accomplished. This high consistence process, therefore, has been almost universally adopted during the past ten years, either for the entire bleaching operation or for that portion of the cycle where the reaction rate is normally slow.

Sulphite made from Eastern spruce or fir bleaches quite readily to a satisfactory white. By using the high consistence, low temperature process last referred to, and exercising reasonable precaution, it is possible to produce an excellent quality of bleached pulp from these Eastern woods in a single stage operation. With Western woods, however, and with hemlock in particular, we have certain colored residues which are very difficult to bleach out without injury to the fibre, and this fact has led to the general adoption of multi-stage bleaching for pulp made from these woods.

Washing

During the bleaching cycle there is a progressive accumulation of reaction products, the presence of which is detrimental in several ways. They have the effect of slowing down the rate of reaction as they accumulate. They react with more chlorine than is necessary to remove them from the fibres. They require an excess of bleaching agent to be carried through the cycle, in order to prevent subsequent discoloration of the fibre. Some of them are of a character which makes thorough washing of the fibre very difficult. The more non-cellulose material there is present in the unbleached pulp, at the beginning of the cycle, the more pronounced and objectionable are these effects.

*Paper presented at the Spring Meeting of the Pacific Section of TAPPI, Everett, Washington, April 18, 1931.

It is the object of multi-stage bleaching to overcome this difficulty by using only enough bleaching agent to act on a part of the non-cellulose material in the unbleached pulp; then washing the pulp substantially free of the reaction products, and acting upon the remaining non-cellulose material with fresh reagent in a subsequent operation.

This procedure is selective in its action. In the first step the large bulk of more readily reactible material is acted upon to the extent of removing it from the fibre and converting it into soluble compounds, but not to the extent of de-colorizing it. This material is then removed from the pulp mass, in the form of a colored liquor, at the first washing operation. In the subsequent bleaching step the more highly resistant material must be dealt with, principally stains which cannot be readily removed from the fibre but which must be oxidized to colorless compounds. Since this operation begins with a partly bleached pulp, there is very little residual material present to slow down the reaction, or cause a reversion in color, so that it is not necessary to endanger the cellulose by carrying an excess of chlorine to overcome these tendencies. Furthermore, the small amount of residual material to be handled simplifies the problem of final washing.

Western Pulp

By multi-stage operation we thus obtain a substantial saving in bleaching agent; a more gentle treatment of the fibre, resulting in higher quality; better control of the process, through having it divided into steps; and greater ease of washing the bleached product. There is required, of course, the maintenance of additional equipment and additional power for its operation; but in most instances these items are much more than offset by the saving in chemicals. With Western hemlock pulp, multi-stage bleaching is today practically a necessity, for by its use a pulp fully equal in color to the best spruce pulps can be produced. Not only is this

The pressure of economic factors has served to make consumers of pulp constantly more critical of quality. Pacific Coast pulp has come on the market at a time when buyers have been hardest to satisfy and most reluctant to change from "standard" brands. Careful attention to manufacturing details in all departments has never been more necessary to hold the business.

the case but the fibre of western hemlock is longer than eastern and Scandinavian spruce and makes a pulp of superior strength and cleanness when cooked and bleached at low temperatures. **Western hemlock should not be confused with eastern hemlock, it is a far superior wood and is more like eastern spruce except for its superior fibre length.**

Even with easy bleaching Eastern pulp the economy resulting from the use of multi-stage bleaching is, in most cases, sufficient to justify its adoption.

With the advantages of the high consistence, low temperature process thoroughly demonstrated by several years of single stage experience, it was entirely natural that the first applications of multi-stage bleaching should simply employ two steps of this process, in series. Two large plants, designed on this principle, were installed on the Pacific Coast in 1926 and 1928 and have given very satisfactory operation.

R. B. Wolf (left) new manager of the Pulp Division, Weyerhaeuser Timber Company, and Ray Smythe, manager of the Willamette Iron & Steel Works, pause for a photograph while visiting the Everett Pulp & Paper Company's mill at the April meeting of the Pacific Section of TAPPI.

Further study of the problem brought out the fact that the equipment layout of a two-stage plant could be considerably simplified and actual operating benefits obtained at the same time. It is well known that the bleaching reaction does not proceed at a uniform rate, and considerable scientific data has recently been published on the shape of the bleaching curve under various conditions of temperature and concentration. It is sufficient for the present discussion to point out that the reaction starts off at a very rapid rate and thereafter proceeds at a continually decreasing rate. In the slow portion of the curve, corresponding to the second step of a two-stage operation, the advantages of using high concentrations are just as pronounced as in single stage operation.

In the first stage, however, the rate of reaction is so rapid that a comparatively short time cycle can be obtained with concentrations as low as three per cent, and there are definite advantages in operating the first stage at these lower consistencies. In a rapid reaction it is very important to have rapid and thorough agitation and this can be provided, at low consistence, with simpler apparatus and lower power consumption than a high consistence. It also becomes possible to charge the

first stage bleacher directly with unbleached stock at ordinary consistence, thus making high density de-watering equipment unnecessary.

The proportion of bleaching agents used in the various steps of a multi-stage operation is of the greatest importance and is a problem which has opened up a wide field of investigation. Depending upon the character of the unbleached pulp and the qualities desired in the bleached pulp there is an optimum ratio for each condition; and any considerable departure from this ratio has a marked effect upon the results. There has been considerable controversy on this subject in the technical press; but in spite of certain literature to the contrary, it has been amply demonstrated that for most pulps the point of maximum chlorine economy is obtained by using about forty per cent of the total chlorine in the first stage. For a number of Eastern pulps, this ratio also gives the best all around satisfaction in practical operation; and the first three installations of the so-called "two-phase system" are still operating at approximately that ratio. (The term "two-phase" is used to designate the system of low consistence first stage, high consistence second).

Methods

With Western hemlock sulphite, however, or where extremely bright color is required from certain Eastern pulps, it is necessary to disregard the point of maximum chlorine economy and use a considerably larger portion of the total chlorine in the first stage. In some cases over eighty per cent of the chlorine is used in the first stage. This invariably results in higher total chlorine consumtion than where say a 40-60 ratio is adhered to, but this appears to be unavoidable where high color, combined with high strength, are required. Where these high first-stage chlorine ratios are indicated, it is decidedly advantageous to apply all, or part of the chlorine directly as a gas, instead of in the usual form of calcium hypochlorite liquor. In some instances, chlorine alone is added directly to the pulp; in other cases, chlorine is used in combination with hypochlorite liquor; or chlorination in the presence of a suitable alkali may be employed; or chlorination followed by treatment with an alkali.

Problems

The particular type of apparatus which has been developed for primary phase, low density bleaching is especially well adapted to chlorination. Because of its construction and high rate of circulation, chlorine, properly introduced, may be dissolved at a very rapid rate, with no loss of gas and no necessity for the use of closed circulating vessels or surplus gas absorbers. It is very easy, under proper conditions, to dissolve as high as two thousand pounds of chlorine per hour in one of these bleachers, with no escape of gas.

Western hemlock sulphite presents the further problem that it contains certain yellowish residues which are extremely difficult to wash out after the second phase bleaching, when the reaction in this phase is carried to a normal point of exhaustion. It is possible to actually bleach out these yellowish residues by carrying sufficient excess bleach through the second phase. This expedient, however, not only increases the consumption of bleach, but the excess bleach is itself almost impossible to wash out by ordinary means and, if carried over to the dryer, will adversely affect the strength and quality of the pulp. Attempts to neutralize this excess bleach, by adding bi-sulphite or other reducing agents, have been found difficult to control.

This problem has been successfully met by employing a third phase of bleaching, usually referred to as "super-bleaching." This third phase is carried out in a very short time cycle, at low concentration and low temperature, the reagent used being free hypochlorous acid. No considerable quantity of non-cellulose material can be acted upon in this third phase, but if the second phase bleaching is carried to a normal point of exhaustion the hypochlorous acid treatment will bleach out, almost instantly, the last remaining traces of yellow residue, giving a brilliant white pulp, which is easy to wash and which retains maximum strength and quality. The same type of equipment is employed for this super-bleaching operation as is used in the primary phase.

By properly adapting each step of this process to the characteristics of the pulp, a brilliantly white bleached sulphite has been produced from western hemlock which shows a strength in excess of the unbleached, and an alpha-cellulose content equal to the highest quality of pulp produced in any region.

Wage Cuts

The Crown Zellerbach Corporation, largest pulp and paper manufacturing and distributing concern on the Pacific Coast, announced a general 10% reduction in wages effective May 1. The reduction applies to all divisions of the Corporation "from the highest official all down the line."

In an executive communique issued announcing the cut it was explained: "The continued depression in the markets of the world has brought unexpected problems. . . . We desire to hold our organization as nearly intact as circumstances allow so as to continue to give employment to the greatest number. To do so at present wages means a cost of production and distribution that the present market does not permit."

The announcement expressed the hope that "the time is not far distant when business conditions will justify us in revising the payroll upward."

Similar wage cuts were announced at the same time in the mills of the Grays Harbor Pulp & Paper Company, the Rainier Pulp & Paper Company, and the Olympic Forest Products Company, which companies are somewhat allied with the Crown Zellerbach group.

The Crown Zellerbach cut is the largest to be made in the pulp and paper industry on the Pacific Coast in point of number of employes affected. Several cuts have been made by other mill organizations in the months elapsing since the stock market crash in late 1929. Wage cutting has been considerably in evidence in other industries, the lumber industry being one of the first to employ this method of reducing costs.

A second 10% cut in wages was effected in mills under the management of F. W. Leadbetter recently. Wages were reduced in these mills by a like amount some months ago, so that the cut now made is the second during the present "depression."

Lincoln G. Gurnett In Fatal Accident

An automobile accident on April 15 in Portland, Maine, resulted in the instant death of Lincoln G. Gurnett, financial manager of the Brown Company, well known pulp manufacturing organization. Mr. Gurnett came to the Pacific Coast in 1888, shortly after the establishment of the old Willamette Pulp & Paper Company's plant at West Linn, Oregon (now Crown Willamette Paper Company).

International Paper Company has reopened its subsidiary pulp mill at St. George, N. B..

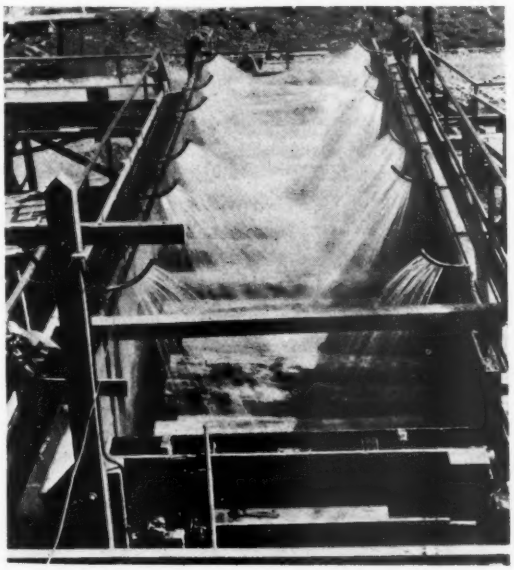
Barking Pacific Coast Logs

A Pioneering Change in Western Wood Room Practice Now Operating in a British Columbia Sulphite Mill

By W. H. WHARTON
Canadian Allis-Chalmers Ltd.
who had charge of erection

BARKING the whole log is in no sense a new idea. The apparent advantages of handling pulpwood in the natural and convenient units as they come from the trees has long been recognized. Superfluous handling of countless thousands of pieces of wood by manual labor could be dispensed with, the clumsy hand barkers could be eliminated, the entire wood room operations could be simplified, and untold volumes of good sound pulpwood taken off with the bark could be salvaged for its original destined use, pulp. Pulp mill operators fell heir to these fundamental benefits upon the perfection of a practical log barker.

However, between the fundamental idea of log barking and the actual accomplishment of the fact there existed a gap which for many years defied efforts of the mechanical engineer to bridge. Today the idea is an established fact. There are at the present time in operation 83 installations of the Thorne log barker. Forty-two of these are in Europe, all are operating on wood of small diameter (as compared to Pacific Coast conditions), that is to say, wood of about eight inches average diameter. All European installations handle pulpwood one meter in length.



Here the logs are shown going thru the barker at the Port Alice mill with the showers turned on under normal operating conditions.

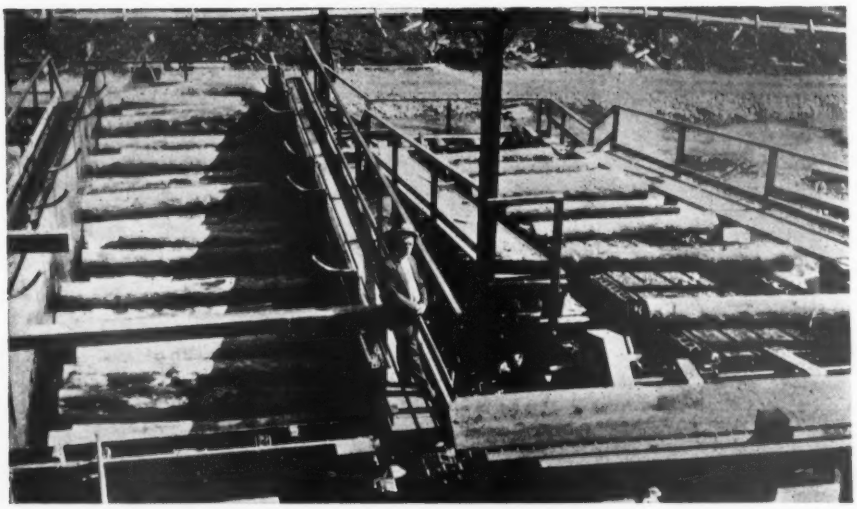
Thirty-nine Thorne barkers have been installed in mills on the North American continent. Of these only six are barking wood of greater length than four feet, and, with one exception, of wood of larger average diameter than eight inches. All of these American barkers with the same single exception, are constructed to handle the relatively small pulpwood common to the eastern part of the continent, that is, wood ranging in diameter from four to 14 inches, with the average diameter about eight inches.

First Barker for Large Logs

The single exception referred to, which is the main subject of discussion in this article, is the Thorne log barker installed at the Port Alice mill of the British Columbia Pulp & Paper Company, Ltd., in the first quarter of 1931. This barker is now operating and is unique in that it is the first of its kind to be constructed for Pacific Coast conditions. The Port Alice barker is designed to handle logs up to about 30 inches in diameter, with the average diameter about 20 inches. The purpose of citing the 82 log barkers installed prior to the Port Alice unit was to illustrate that the theory of log barking had a sufficiently wide acceptance to demonstrate its practical utility. It is particularly significant that the log barker has been so widely adopted in Germany, where pulpwood costs are relatively high and maximum utilization of the wood is an economic necessity to successful operation.

As pointed out, all of the 82 barkers installed prior to the adoption of the log barking principle by the B. C. Pulp & Paper Company are operating on logs of small diameter and consequently of less weight. While many mill operators have been willing to concede the success of Thorne barkers when used to clean small wood they have been hesitant to accept the principle for Pacific Coast conditions where the trees are so much greater in size. Some dismissed the idea with the thought that to bark Pacific Coast logs would involve heavy and cumbersome machinery and an excessive use of power, while others contended that bark conditions on Pacific Coast logs were such as to prohibit the effective use of barkers of this type.

The willingness on the part of the B. C. Pulp & Paper Company to experiment with the idea of barking large Pacific Coast logs can be attributed in part to the practical experience of a number of executives and department heads of this company with eastern operating conditions where log barkers had been in use. While some



At the left is the main barking tank. It is divided into three pockets and is 11'6" wide. At the right is a conveyor for returning logs if rebarking is necessary.

adjustment can be expected to develop, in a pioneer installation such as this, the Port Alice barker has now been operating a sufficiently long time to demonstrate its fundamental utility. Reliable cost data on savings possible must of course wait for sufficient time to elapse to acquire reliable long-time experience data, but there is evidence thus far that the substitution of log barking for hand barking will eventually be able to effect an appreciable saving on the finished product.

Port Alice Emphasize Cleanliness

It should be emphasized here that the Port Alice mill produces a high grade select bleached sulphite pulp which competes in the worlds' markets with the top grades. In fact, the mill has established an enviable reputation for quality. Consequently, the company could be expected to be more than usually critical in securing a barker which would do a thoro job of wood cleaning and in no way jeopardize the quality of the finished product.

In principle the Thorne log barker consists of a structural steel tank of sufficient width to accommodate the desired length of log, this tank being divided into two or three irregularly shaped pockets. The logs are fed into the first pocket and are caused to rotate against each other by a series of cams fitted to a revolving shaft in the bottom of the pocket. This causes the logs to rub against each other constantly and to gradually feed over into the next pocket and finally out to the chipping conveyor. The bark drops out thru the cam slots at the bottom of each pocket. Showers are played on the logs during the barking process.

The fundamental principles of construction were not departed from in the Port Alice installation except to build for much greater strength and the power necessary to accommodate the 20-inch to 30-inch logs.

Briefly described, the Port Alice barking mill consists of a structural steel tank of sufficient width to take average 10-foot logs. The actual width of the tank is 11 feet 6 inches. This tank is divided into three irregularly shaped pockets at the bottom of which slots are provided to permit the passage of peculiarly shaped cams revolving at approximately 12 revolutions per minute. The three shafts upon which the cams are fixed are mounted directly below each pocket, running in 10-inch loose turned liner type bearings of exceptionally heavy design. Each of these shafts has four solid forged flanges approximately 20 inches in diameter, through which the four cams are affixed by means of 12 large turned, reamed, and fitted bolts, and is driven by means of a detachable rim, cut steel spur gear 8 feet in diameter, 3-inch pitch.

The three shafts and their respective driving gears are coupled through pinions and three sets of beveled gears to a common line shaft running at approximately three hundred revolutions per minute. All gears are cut steel, the pinions being cut from solid forged blanks.

In operation, the logs which run from 16 to 30 inches in diameter and from 40 to 44 feet long as they come in the rafts, are raised 35 or 40 feet by means of a steel cable parbuckle and deposited upon a sloping log deck. From the log deck the logs are placed on a conveyor by means of a steam log stop and loader and carried toward the barking machine. Before reaching the barker they are cut into four equal lengths. As each piece is sawed off with the 84-inch swing saw it is carried over to a point directly opposite the feeding end of the barker where it strikes an automatic stop trip which raises a cross running conveyor, which in turn deposits the logs directly into the machine.

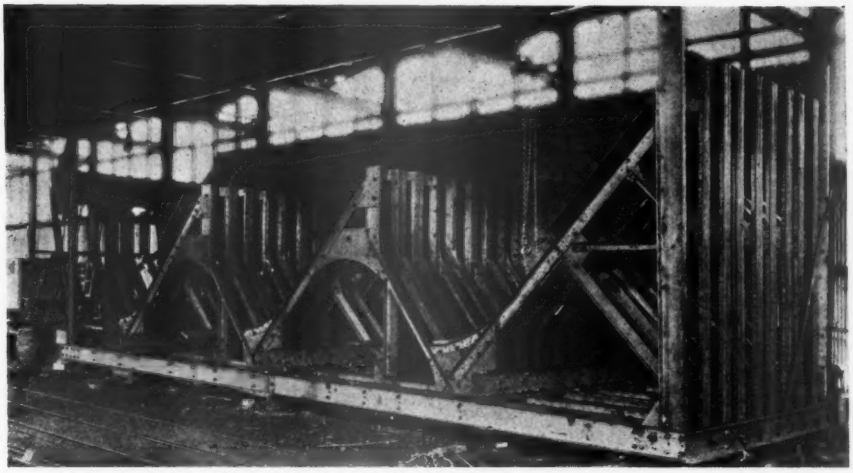
Feed of the log into the first bucket of the log barking machine can be controlled. Actuated by the revolving cams underneath the logs are tumbled about and the bark is loosened and removed by the friction of the logs rolling against each other.

Log Handling Simplified

After passing through the three pockets the logs are deposited upon a sloping delivery plate in which are placed two vertical steel stop posts which can be rapidly lowered and raised again by means of a rocking arm and air cylinder. These stop posts provide control for logs discharged and check their progress for the brief space of time necessary for examination.

After passing the stop the logs roll over hinged cut out arms on to a double strand conveyor carrying them to an extra large size Karlstad chipper which handles three 10-foot logs per minute.

Should the log against the stop post be insufficiently barked the above mentioned cut-out arms are raised out of the way allowing the log to fall approximately three feet on to a continuously running roller bed from which



This construction view of the barking tank illustrates the peculiar shape of the pockets which facilitates debarking friction. Note heavy construction and relative size as compared to the barrel.

it is kicked off on to a return log conveyor which in turn delivers it to the original feeder conveyor, thus passing it back into the barking machine.

As Western hemlock logs of this large size often weigh 2,000 pounds and more it is necessary to check their sudden drop in order to avoid damage to the mechanism and roller bed. Therefore, when cutting out the unbarked logs a specially designed steel cradle is provided just below the cut-out arms. These cradles are held in the uppermost position by means of two low pressure water cylinders and rams. These rams are hollow with open bottoms and are kept filled with confined air. This air pocket takes care of the shock due to the impact of the falling log. Immediately the log rests on the cradle the operator opens a quick-acting valve allowing the water to escape from the cylinders and thus rapidly lowering the log to the above mentioned roller bed.

As previously mentioned, the ultimate capacity of the machine of a size such as that at Port Alice will necessarily have to wait the accumulation of more operating data. Thus far, however, the machine has demonstrated an ability to deliver two clean barked logs per minute. With more useful attention in the woods to clean trimming of the logs, and better grading, a delivery from the barker of three to four logs per minute should be within the reason of expectation.

Log Sizes Should Be Uuiform

While the Port Alice barker is designed to handle logs of any size from about 12 to 30 inches in diameter, this does not mean that the logs can be run in indiscriminately as to size if maximum results are expected. In other words to mix the real small logs with the largest logs tends to subject the larger logs to rougher treatment than necessary. This point is easily overcome, however, in the log pond by sorting the logs when the rafts are broken and of feeding logs of approximately the same diameter to the barker.

The horsepower consumed is, as may be expected with a machine of this type, a fluctuating factor. To start up under a dead load with logs in all three pockets requires some 450 to 480 H.P. Immediately movement commences and the logs begin rolling the ammeter reading at 2200 volts shows a steady fluctuation between 54 and 74 amperes or approximately between 216 and 296 H.P. The machine is driven by two 250 H.P. slip ring motors connected to either end of the short jack shaft from which the power is delivered to the main line or bevel pinion shaft of the machine by means of a 28-rope Texrope drive.

Western Hemlock Not Difficult to Bark

As for the quality of barking accomplished it should be stressed that the problem anticipated because of the relatively heavy bark on Western hemlock logs did not materialize to the degree expected. The weight of the logs is so great and the action of rubbing so positive that the barking action is quite positive. The number of logs now being returned for a second barking can be expected to decrease as more carefully selected logs are used. Needless to say, the log barker seeks only to remove the bark, and none of the excellent pulpwood which lies next. Cutting good wood away with hand barkers is impossible to avoid and wood losses here are often excessive.

Further, there is no severe brooming of the ends as is often experienced in some other types of barkers. The rubbing action is all on the round sides of the log and no action takes place at the end. With the use of large size chippers which are able to handle whole 10-foot logs up to 30 inches in diameter a major saving in wood is effected. There is no loss through wood taken off with the barker nor through the excessive cut necessary in breaking down the logs on band or circular saws or the bolters, edgers and similar equipment common to the ordinary type of wood mill now used in Pacific Coast practice.

The fundamental advantage of Pacific Coast mills is the abundance of raw material, wood, and the low cost thereof. Therefore, it is evident that any improvement in practice which can salvage or effect a greater utilization of raw material will improve the yeld of the Western mills and afford them a greater margin of profit, which in these days is of such elementary importance where sharp competition exists in the pulp and paper market.

Mason Olmsted, vice-president, Zellerbach Paper Company, San Francisco, was a recent visitor to the Los Angeles branch of the concern.

Control of Paper Mill Wastes with Chlorine and Ammonia*

By BRIAN L. SHERA
Wallace & Tiernan Co.

WASTE should be an obsolete term in industry. We are now in the era of intense competition where waste is inexcusable and decidedly unprofitable. Many of the process industries have gone to enormous expense to find means of stopping waste in the manufacturing process.

THE pulp and paper industry is aggressively developing an efficiency in keeping with modern practice in industrial operations. Vast sums have been spent in improving the designs of mechanical equipment, in the study of paper making, chemistry, in physical and chemical facts controlling dyeing, hydration, sheet formation, bleaching. Gerat advances have been made and more are forthcoming, but some "bugs" remain to be eliminated.

This paper is mainly concerned with the elimination of the little "bugs"—the algaeous and bacterial growths which in paper mills are termed slime.

Practically every mill operator has experienced the nuisance and expense caused by the growth and deposition of algaeous and bacterial slimes on the water surfaces of the handling equipment. Certain slime forming organisms find paper mill conditions excellent to their growth. In pulp there are present small quantities of sugars and waxes which are favorite foods of the organisms. Temperature conditions are favorable. Under optimum conditions certain bacteria are capable of reproducing themselves every 20 minutes. This would mean that growth proceeds in geometrical progression. The algae and bacteria that form slime find entrance to the mill system through the water supply, ground wood, furnish and, infrequently, in the size.

The existence of slime in any amount in a mill is definitely known to be a cause of waste which I will later show by actual evidence.

Chlorine and Chloramine Control

The use of chlorine has been found the most effective and cheapest means of inhibiting or eliminating slime growths and consequent waste. Chlorine has a high oxidizing potential and savagely attacks the slime as well as other organic matter, often dissipating its strength before the job is over, making necessary a second point of application. Just this last year an ammonia-chlorine compound, which has brought revolutionary changes in water works practice, has been introduced to combat pulp and paper mill slimes. It is called mono chloramine with the formula NH_2Cl and is made on the job by the accurately controlled combination of the two gases in dilute aqueous solution. It has a lower oxidizing potential than chlorine and not being so active against organic matter, it is not so readily dissipated and very persistent in its germicidal effects. I believe each of these processes has its place in slime control work.

Cost data amassed from well over one hundred mills equipped with chlorine control apparatus and classified as board, book paper, tissue, kraft, rope paper, felt, news print, and straw board mills indicates that chlorine costs would run from 2½c to 18c per ton of product including that of all classes of mills on the Pacific Coast.

Often fear is expressed that in starting slime control, production would be ruined for days. I have seen and supervised slime elimination work and in no case has the mill experienced difficulty from this source. The process must be accurately controlled and slime elimination taken slowly. The soft slime is attacked first and then the hardened material, but in the meantime no new slime has built up.

Corrosion possibilities in pipe lines, fourdrinier wires and other mill equipment are not approached in slime control as the dosage probably never exceeds 3 parts per million or a chlorine concentration of three ten-thousandths of one per cent.

Experience in a number of mills has shown that there is no effect on dyes, even on the most delicate shade. The chlorine concentration necessary for slime control will not affect the dyes in regard to color, or require an excessive amount to obtain the required color.

Slime a Cause of Waste

Slime affects the quality of water used in paper making. No pulp can be cleaner than the water it is washed with.

Chlorine and chloramines find wide use here and in water works practice. Suspended matter in water that is pre-treated before sedimentation will usually settle out much faster and use less coagulant such as alum. Living organisms multiply rapidly in these settling basins and give off gas that floats them and dirt particles to the surface; all of which counteracts proper settling. Chlorine kills these organisms and sedimentation proceeds undisturbed.

Organic growths cause clogging of the filter beds by their rapid jelly-like development. It is necessary to

*Paper presented at the Spring Meeting of the Pacific Section of TAPPI, Everett, Washington, April 18, 1931.

backwash filters more often, notably in summer when water temperatures are more ideal for rapid growth. Filter capacity is cut down, and increased operating costs result from the necessity of using more coagulants and wash water. Capital costs are increased by building an oversized plant to care for the demand under these conditions. Pre-treatment has shown 20 % savings in coagulants and it is safe to say in ordinary cases that filter runs will be increased 30%.

Last summer I was present at a sedimentation and filtration plant where difficulty was encountered by luxuriant algae growths. Properly controlled chlorination was applied and about $15 per day of chlorine reduced alum costs from $59 to $23, a saving of $36. What was more important, better sedimentation occurred and filter runs more than doubled.

Untreated fresh water often forms a hard scale in pipe lines, caused by organisms which adhere to the pipes walls in a sticky mass that catches and holds any particles of clay and dirt present. These solids consolidate into a hard scale that is accumulative and cuts down effective pipe size so as to offer greater resistance to flow. In a lumber mill using clear well water the smaller pipes become almost completely closed in 6 months; larger sizes suffered proportionately. Controlled chlorination killed the organism that caused the trouble and clear lines resulted.

Condenser De-Sliming

Loss of vacuum in the surface condensers used on steam turbines or otherwise can be relieved by proper chlorination of the cooling water, leaving clean tube surfaces and permitting rapid heat transfer. This is accepted practice in larger power plants. I mention this subject because usually in paper mills the fresh water is first used as condenser cooling water.

Slime in Mill System

Slime in the white water and stock systems decreases the efficiency of all screening and de-watering equipment and obstructs the proper flow of stock and water. This decrease of efficiency is due to the adhering jelly-like nature of slime. It forms and grows on the under side of flat screens in long "whiskers" that obstruct the flow of stock and water through the screen.

Slime grows in the narrow filtrate channels of save-alls. Being narrow, they easily fill up, preventing the easy flow of the filtrate. I have seen save-alls in local mills greatly increase in capacity and remain that way after adoption of slime control methods.

In one news print mill, slime would grow in a consistency regulator, in a day, sufficient to restrict the flow through the goose neck. This of course reacted as would denser stock and too much dilution water was admitted. In flow boxes, slime builds up on the lip of the regulating weir and changes the flow. In a mill where these conditions were very aggravating, slime control corrected them.

Felts are readily clogged by sticky slime which permeates the whole structure of the felt and prevents proper de-watering.

The idea that the slime, scum, or dirt adhering to water covered surfaces is due only to the matting or consolidation of the "wood flour" or finest of pulp particles is erroneous. These finer particles would be easily swept away by the flow of water. Slime presents to them an excellent resting place on its sticky adhering surface. Small broken fibers are usually found consolidated with the slime.

Slime Affects Felt Life

Slime is detrimental to felt life. Aside from clogging felts, bacterial slime is an active cause of rotting and of the nap wearing off. Microscopic studies have shown that certain slime bacteria thrive in woolen felts and decompose the fibers. At these points of decomposition the fibers split and break off.

Nearly every mill that has adopted proper slime control methods has experienced longer felt life and improved dewatering qualities, finding felt life improvements of 15% to 20% and as high as 50%, which I can readily see possible from my observations.

On machine wires slime is unusually prevalent and causes blinding or filling up of the wire, with holes resulting in the paper. Some mills have stated that the machine wires have shown longer life over a period of time. I can bear out this fact in one mill that over a period of a year got 8% longer wire life. The explanation of this is difficult, but I shall hesitatingly advance the theory that slime free stock exhibits more freeness and that the wire in passing over the suction boxes would undergo less deflection or in other words would experience less mechanical strain.

Production Losses Result From Slime

Slime causes a loss of production, efficient quantity and finest quality of product that could be produced from the raw materials used. Any deviation from this production means a loss or waste in mill operation. Slime directly causes a loss in both quantity and quality production.

We now consider the infinitely greater quantities of slime organisms present in the stock. They may be found between fibers and entirely surrounding others. They are infinitesimaly small but nevertheless they occupy space between the fibers and prevent intimate contact and proper cementation of the fibers during sheet formation. When slime contaminated paper reaches the drier train, the slime breaks down under the heat. The result is a paper of relatively loose formation and frequently filled with pin holes. "Slime breaks" often occur.

Open systems are another source of loss in quantity production. The mill effluent carries valuable quantities of stock, filler, size, heat, etc., cause stream pollution and put paper mills in an unfavorable position with the people who at any time may pass drastic legislation

To the executive who feels it in his bones that his mill isn't getting full life out of felts, and wires, isn't getting maximum satisfaction and and capacity out of the filter system, isn't getting the most out of the steam plant, but is suffering too much loss thru clean-ups, breaks and invisible shrinkage, this discussion by Mr. Shera on the subject of slime control is recommended.

Slime is no longer accepted as a necessary evil in pulp and paper mills as once was the mossy green lining on the old oaken bucket. With the ever increasing injection of science into industry the need for specialization of effort becomes more and more necessary. Today we no longer can shrug shoulders and say, "It's always been that way." Now we get out the microscope and find out the why of things.

against the practice. By controlling slime many mills have been able to close their systems appreciably.

In modern sewage practice, the separate digestion or bacterial decomposition of the solids among which is paper pulp, is the means by which all of the sewage is liquefied. These bacteria often exist in slime and it is known that they will similarly carry on decomposition of the stock in the mill. This is called invisible shrinkage. Mills practicing slime control have reported reduction of invisible shrinkage and consequently increased production up to as much as 1½%.

Color is one important factor of pulp quality. Most Pacific Coast fresh water supplies are neutral or slightly on the acid side and carry appreciable quantities of iron. Great quantities of iron also enter the stock by reason of the corrosion of mill equipment. This corrosion itself imposes a terrific toll on the cost of production.

Usually slime is dark colored, probably because of discoloration by iron salts and any quantity of it dispersed throughout a sheet of paper will have a general darkening effect. Mills that practice controlled chlorination have often been able to produce a brighter paper. I personally know of a news print mill that found great relief from discoloration by this means.

In slime samples Crenothrix has been identified. It is commonly called "iron bacteria" because it grows in tufts and its filaments have a gelatinous sheath colored brown by a deposit of the insoluble ferric hydroxide. It usually is present in iron bearing waters where it absorbs organic matter containing an iron radical. The organic matter is digested and the iron which is bound to the molecule is rejected. It is caught in the sheath of the organism and there undergoes oxidation to the insoluble ferric hydroxide. It has long been known that water containing Crenothrix is very detrimental in laundry work. The same may be said of paper making.

One Northwest mill had an unusually black slime with a nauseating odor in which hydrogen sulphide could be detected. A microscopic investigation showed what was apparently an intimate mixture of Crenothrix and Beggetoa, a rod shaped organism in the center of which is found microscopic grains of free sulphur. When these two organisms died and disintegrated in close contact, jet black Ferric Sulphide was formed. The concentration in the slime was such that a simple qualitative test showed the presence of quantities of sulphur and iron.

These illustrations serve to show how marked an effect slime has on the color and brightness of the sheet.

Investigators also report that a slime free paper takes dyes better.

The end products of bacterial decomposition are usually acid and it has been noted that slime influences the condition of the stock during the beating operation. When a control of the pH is of importance, it certainly is not desirable to have present an uncontrolled organism which can cause variations in the pH.

Clean-Ups Cost Money

Slime is a source of labor and chemical costs. A mill that is not slime free finds it necessary to shut down periodically for a clean-up. Labor costs are involved for cleaning and scraping slime coated surfaces. Inaccessible places are reached by steaming, boiling, or by the use of chemicals. Besides these costs, a mill may find it necessary to clean-up several times during a steady run on a large order. Hand cleaning of slime in a stock chest is a costly operation.

Chlorine Controls Odors

Apart from slime control, chlorine is used to oxidize substances giving off objectionable odors. Water in which putrefaction occurs can be treated with chlorine to relieve this condition. Many mills find this treatment necessary on the fresh water supply. Kraft mills often find that mercaptans are present in the finished paper. This is very objectionable from the viewpoint of marketing. A Northwest mill found a very practical solution for this trouble by a low controlled chlorine dosage in the fresh water supply. Work is being done with chlorine with a view toward controlling Kraft mill odors, and in treating waste sulphite liquor.

Control Essential

Mills, no two of which are alike, offer such a variety of problems that it is difficult to make a general statement about the method of treatment. The best procedure is to have a survey of the mill made by those thoroughly familiar with this work. From experience they can soon tell whether to treat the fresh water or the white water or both and the proportioning of the treatment of each; whether chlorine or chloramines are advisable to use under particular conditions.

I cannot too strongly emphasize that control is essential to the successful outcome of this treatment. The formation of chloramines is simple enough, but control must be exercised in the proportioning of chlorine and ammonia, and their method of introduction to the system. To those mills practicing Slime Control I would like to suggest that the same system of routine control be established as in other mill processes.

CONCLUSIONS

Slime has been found to be the cause of waste in pulp and paper mills. It is detrimental to machine operations, to felt life, and quality and quantity production. As accounting systems in paper mills improve we get a better and closer check on the origin of costs, and a surprising amount may be charged to slime.

By means of accurately controlled dosages of chlorine or chloramines, the costly effects and waste occasioned by slime in pulp and paper mills, can be restricted or entirely eliminted.

ACKNOWLEDGMENTS

I am indebted to the following persons for particular information:

L. H. Enslow, Research Director of the Chlorine Institute.
W. L. Savell, of the Mathieson Alkali Works, Inc.
Miss Louise E. McGrath, of the Booth Chemical Co.
O. T. Birkeness and R. B. Martin, of Wallace & Tiernan Co., Inc., TAPPI
R. J. Schadt, of the Hawley Pulp & Paper Co., and Ralph Reid, of the St. Helens Pulp & Paper Co.

News Print Prices Are Cracked

The pressure to adjust supply to demand in the news print field further evidenced itself in April when big mill members of the News Print Institute of Canada reduced the price of news print by $5 a ton effective May 1, with a retroactive reduction of $3 a ton from January 1 to April 30. This initial reduction was closely followed by a second announcement which extended the $5 cut to January 1 by increasing the retroactive clause to $5 a ton.

The price of news print is now $57 per ton delivered to New York.

That the move by the Institute mills was made without consulting International Paper is made plain in a telegram sent on the heels of the announcement to all customers of I. P. by J. L. Fearing, vice-president in charge of news print sales, indicating that International would protect their trade.

Great Northern Paper Company, Maine's great news print producer, announced that it "would maintain its competitive position."

Upon being advised of the Atlantic Coast cut in prices J. D. Zellerbach, executive of the Crown Zellerbach Corporation, stated that the Eastern cut in effect about equalized a $5 cut which had been made on the Pacific Coast last Fall. He further intimated that the Eastern cut should not affect Pacific Coast news print prices.

Pacific Coast news print is now sold at $58 per ton delivered at principal ports.

In a statement to PACIFIC PULP AND PAPER INDUSTRY A. E. McMaster, general manager of Powell River Company, outlined the situation.

"The newsprint industry of North America has been suffering severely through over-production," said Mr. McMaster. "This has been aggravated greatly by the reduction in the consumption of newsprint by publishers, consequent upon the general depression in all lines of business. This condition is not peculiar to North America; it prevails in all newsprint producing countries.

"Prices in various markets have declined for this reason and in sympathy with the downward trend in other commodities. To follow competitive conditions and their economic trend the Pacific Coast mills reduced their price last October, but at that time the eastern mills did not follow the western reduction. The recent eastern price reduction is about equivalent to that made on the coast last fall and is unlikely to affect coast prices at this time, as the prices east and west are now about in line."

The announcement of a reduction in price reduction, operators of the eastern mills emphasize, does not fully imply price cutting. American publishers have been withholding $3 a ton on contract prices for some time, and it was claimed recently by the American Newspaper Publishers Association that some 400,000 tons of newsprint had been contracted for in the United States at prices under the contract level established in 1930. Major producers were asked by the publishers as to what action they intended taking in order to bring the contract price in line with the market price.

At the time no action was taken in response to this request, and the publishers took the matter into their own hands by withholding $3 a ton. In view of the instability of the market, no attempt was made to collect this difference.

The chief problem of eastern newsprint producers is how to get out of the present situation without becoming committed to further losses.

Capital reorganization of the newsprint companies is predicted in many quarters. The latest report from the east indicates that Minnesota & Ontario Paper Company, one of the Backus-Brooks units which recently went into liquidation, will be taken over by International Paper Company. Negotiations are under way to rehabilitate the Great Lakes Paper Company, another Backus-Brooks mill, which has been closed for some time following failure to pay interest on a $10,000,000 bond issue. E. W. Backus, it is understood, has offered to allocate sufficient tonnage orders to the Great Lakes company to enable the mill to operate five days a week and pay the interest which thus far has been defaulted.

Pacific Mills Ltd., An Institution

Annual payroll of Pacific Mills, Ltd., Canadian subsidiary of Crown Zellerbach Corporation, is now $1,700,000 and approximately 1,700 men are being employed, according to figures given out recently by the company.

Eighty million board feet of timber are converted every year into 75,000 tons of newsprint, 10,000 tons of wrapping paper and 3,000 tons of tissues. More than $25,000,000 is represented by the investment in mill and company property at the model town of Ocean Falls, B. C., where the company operates.

In addition to the plant at Ocean Falls, there is the converting plant established in the city of Vancouver about a year ago which represents an investment of about $500,000. Here the paper manufactured at the mills is converted into toilet paper, paper towels, wrapping tissues and waxed papers of all kinds, printed bread wraps and fruit wraps.

Selling agent for the company in Vancouver is Vancouver Pacific Paper Company, Ltd.

Oregon Compensation Rates Increased

Rate increases ranging from 5 to 20% affecting employers under the workingmen's compensation act were announced by the state industrial accident commission of Oregon last month. The rate increases become effective July 1. Listed among the more important industries affected by the increase in rates are pulp and paper manufacturing, logging, and sawmilling.

The rate for the logging industry west of the Cascades is increased approximately 20%. Records show that the logging industry has resulted in a loss to the commission of more than a half million dollars. The schedule of rates for the various industries was expected to be announced early this month. They are based on the experience tables dealing with the different industrial classifications.

Rufus Holman Now Oregon Treasurer

Rufus C. Holman, president of the Pacific Coast Paper Box Manufacturers' Association, and head of the Portland Paper Box Company, Portland, was appointed state treasurer early this month. He succeeds the late Thomas B. Kay. Mr. Holman, a native of Oregon, has long been identified with movements affecting the welfare of Oregon and Oregon folks. He served 10 years on the Multnomah board of county commissioners and was a candidate for mayor of Portland a year ago.

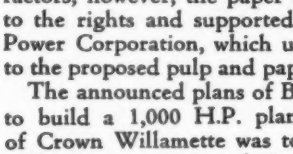
Among great enterprises over which in a public capacity Mr. Holman exercised supervision and an important measure of direction was the building of the interstate bridge between Oregon and Washington, the construction of the highway through Columbia gorge, and the erection of the great county hospital in Sam Jackson Park.

Campbell River, B. C.

British Columbia Power Corporation has been given three months' extension of time in which to complete its preliminary survey of the waterpower available at Campbell River. This is the site originally obtained by the Canadian Crown Willamette Paper Company for a proposed expansion.

Following the merger with Zellerbach Corporation, the depression in the newsprint market, entrance of other bidders for the power rights and various other factors, however, the paper company released its claim to the rights and supported the appplication of B. C. Power Corporation, which undertakes to supply power to the proposed pulp and paper mill whenever it is built.

The announced plans of B. C. Power Corporation are to build a 1,000 H.P. plant. The original program of Crown Willamette was to build a 300-ton unit and add two more units of similar capacity subsequently.



RAYMOND P. HILL
recently moved up to the position of president of the
PULP BLEACHING CORPORATION

Japanese Watch Russ Pulpwood Actions

While the clamor raised in the United States and to a lesser extent Canada on the matter of pulpwood imports from Soviet Russia has been long and loud, these nations of the North American continent are not the only ones to be concerned with "the way the bear walks."

Within the memory of most of us the Japanese met the Russians on the battlefield. Perhaps the feelings since that date have been more or less delicate. Geographically, the Soviet territory comes in too close proximity to Japan to permit the latter nation to move altogether unconcerned. Altho acting with studied diplomacy, the Japanese are nevertheless keeping a weather eye on the Soviet.

Much of the timber that eventually finds its way into pulp in Japanese mills comes from the far northern island of the group, Karafuto, or Saghalien, as it is perhaps better known. The Soviet controls the northern part of the island, the Japanese the southern. The need for protection of the pulp trade is seen in the following statistics of Japanese pulp output:

	1929 Long Tons	1930 Long Tons
Saghalien	273,577	304,419
Hokkaido	197,448	182,439
Mainland	132,343	124,459
Korea	15,234	14,221
	618,602	625,538

It is seen that Saghalien is the only district that is increasing pulp supplies and Japan must rely on the retention of this area for its pulpwood in the future.

Japanese Pulp Imports—February, 1931

Japan imported during February, 1931, chemical pulp in the following quantities (amount stated in pounds): Sweden, 3,653,600; Norway, 1,406,133; Germany, 377,067; Switzerland, 288,267; France, 111,466; U. S. A., 1,594,800; Canada, 6,945,067; Philippines, 4,400; Europe, 960,533; total 15,341,333.

Japanese Paper Production—March, 1931

(Amounts stated in pounds)

	Production	Sales
Printing Paper (Superior Quality)	12,128,567	13,154,860
Printing Paper	8,822,948	10,025,834
Writing Paper	3,609,386	3,703,168
Simili Paper	12,487,398	8,290,514
Art Paper	1,130,310	1,269,633
News Printing Paper	44,642,390	47,320,311
Sulphite Paper	4,278,136	5,180,218
Colored Paper	1,119,709	1,365,169
Wrapping Paper	10,667,734	8,787,519
Chinese Paper	1,649,138	2,592,985
Board Paper	6,537,246	5,410,393
Miscellaneous	5,761,164	5,922,181
	112,834,126	113,022,785

Lloyd Riches Joins Hawley

Lloyd Riches has resigned as manager of the Western Paper Converting Company, Salem, Oregon, to become the Northern California representative of the Hawley Pulp & Paper Company, Oregon City, Oregon. He will have offices in the Robert Dollar Building, San Francisco.

Mr. Riches has been connected with the Western Paper Converting Company in an official capacity since its organization in the summer of 1925, for the first few months as sales manager, later as secretary and then as plant manager until his resignation.

The Salem converting plant will now be under the management of R. L. Galloway, the son of A. B. Galloway, who is sales manager of the Oregon Pulp & Paper Company and vice-president and general manager of the Western Paper Converting Company.

The Salem plant is one of the most complete converting plants on the Pacific Coast. It makes a wide variety of products, such as ham wraps, fruit box liners, confectionery cups, and numerous articles from glassine and greaseproof papers. It also makes stationery items, note books, and school supplies. A great deal of its paper is purchased from the sulphite specialty paper mill of the Oregon Pulp & Paper Company, which is located only a few blocks away.

Beyerl Managing Spaulding Mill

C. F. Beyerl, formerly manager of the Western Paper Converting Company, Salem, Oregon, was named mill manager of the Spaulding Pulp & Paper Company, Newburg, last month. Under Mr. Beyerl's management production has been increased 10%. A further increase in output is assured, it is reported. The plant has been running on full-time basis since April 1, with sufficient orders on hand to insure continuous operation for some time.

While Charles K. Spaulding, head of the company, has given no confirmation, it is understood that a public financing program is being worked out with a view to carrying out an improvement program.

The 1930 annual report of International Paper and Power Company shows consolidated earnings, after deducting all interest and other charges senior to dividends on the preferred shares of the company but before deducting depreciation, amounted to $12,695,668. Total dividend payments on the shares of the company amounted to $7,703,037 leaving a balance before depreciation of $4,992,630. Depreciation charges (the rate of which was reduced as of July 1, 1930) amounted to $8,489,143, resulting in a deficit for the year of $3,496,513. President A. R. Graustein said:

"The extensive pulp and paper development program initiated by International Paper Company in 1925 was substantially completed during 1929. Since the end of 1929 the news print mill at Dalhousie, New Brunswick, and the kraft mill at Panama City, Florida—have been placed in operation.

"The adverse business conditions under which operations of the company were carried on during the last year emphasized the benefits which are being increasingly realized from the diversification of operations and the concentration of production at low cost modern mills which the completion of this development program has made possible. No substantial further capital expenditures for pulp and paper properties are now contemplated.

"Due in part to the additional low cost paper-making capacity now available at the two new mills and in part to further increase in operating efficiency at mills already in operation, manufacturing costs for 1931 should show further substantial decreases."

* * *

The American Writing Paper Company, Inc., Holyoke, Massachusetts, made a net profit in 1930 of $145,338. Total sales were $10,072,509. In 1929, the sales amounted to $12,134,875, and the net profits were $364,433.

President Sidney L Willson informed the stockholders that although the sales dropped off 17 percent last year, the company made approximately the same amount that it netted in 1927, when the sales were $3,267,021 greater.

In his report Mr. Willson stated that during the four-year period of the reorganized concern's existence $2,383,877 was spent on rehabilitation of the company's mills.

* * *

St. Regis Paper Company's subsidiary, The Bates Valve Bag Company, is erecting a new bag factory at New Orleans to use about 12,000 tons of paper annually.

* * *

Efforts of the International Brotherhood of Paper Makers to effect a six hour day with six hours' pay, thus inducting a four tour system to spread jobs out to more men is not meeting with unanimous approval by employes who thus vision decreased wages.

* * *

Net income of the Hoberg Paper & Fibre Company, Green Bay, Wisconsin, during 1930 totaled $315,393 before federal taxes and interest, comparable to $375,934 for 1929. Hoberg's sales for 1930 were $2,996,000 as compared to $3,106,000 the previous year. Cost of sales for both years was about the same.

* * *

Scott Paper Company reports for the quarter ended March 29, 1931, net profit of $303,974, equal, after preferred dividends, to $1.63 per share on 162,253 shares of common stock outstanding. This compares with net profit of $284,565 in the first quarter of last year. Net sales for the first quarter of this year amounted to $2,429,878, against $2,274,765 in the corresponding period of 1930.

A decline of net earnings of about $200,000 for the first quarter of 1931 as compared to the same period in 1930 is shown in Kimberly-Clark Corporation's report.

Total net earnings of the Neenah, Wisconsin mill were $484,147.93, equal to 96 cents a share on 499,800 shares of common stock. Last year the company had net for common of $1.39 a share.

Net sales for the quarter were $4,871,892.64, cost of sales $3,751,993.55, and gross profit $1,119,899.09.

* * *

Hinde & Dauche's subsidiary, Maritime Paper Products, Ltd., has awarded construction contract for a plant at Halifax, Nova Scotia, to manufacture shipping containers.

* * *

Some 2500 citizens of Fort William, Ontario, have petitioned Premier Henry to effect resumption of operations in Abitibi Power & Paper Company's news print mill there, charging artificial manipulation of price has brought unemployment. Cancellation of Abitibi's timber limits looms as a possibility.

* * *

Quebec Pulp & Paper Corporation discontinued grinding operations end of October, 1930, due to poor prices, and at annual meeting reported total operating deficit of $945,664.

* * *

The Dalhousie, New Brunswick, mill of the New Brunswick International Paper Company has resumed full time operation after running on a curtailed program extending over several weeks.

* * *

Premier Bennett of Canada has said that the prospective closing down of high cost mills thru the consummation of a huge news print merger in the Dominion, and the attendant hardships that would be worked upon families thus left stranded in the idle mill towns, is a matter for the individual provinces to handle.

* * *

President J. H. Gundy of Canada Power & Paper Company was besieged with questions from shareholders at the recent stormy annual meeting. They, the uninformed shareholders, demanded information on current operations instead of "paltry excuses."

"You can't unscramble eggs," snapped Gundy. "Are there any other questions?"

* * *

A. L. Neumann, one of the oldest Zellerbach employes in point of service, is back at his desk in the Los Angeles branch of the company after a severe illness which kept him away from the office for three or four months.

* * *

Smith McLandress, Fox River Paper Company, Appleton, Wisconsin, was a recent visitor to the trade in Los Angeles.

* * *

M. A. Park, Holyoke Card & Paper Company, Holyoke, Massachusetts, paid a visit to Los Angeles friends in the trade recently.

* * *

M. B. Lowe, president of the Lowe Paper Company. Ridgefield, New Jersey, was a recent visitor to Los Angeles.

* * *

Fred Williams, manager Linweave Association, Springfield, Massachusetts, paid a visit to the trade in Los Angeles recently.

Japanese Pulp Price Outlook Not Good

Altho the paper mills in Japan have succeeded in improving their position by a most rigid curtailment program, one that has real teeth in it, the outlook with the pulp trade is far from good.

The Japanese industry is more or less divided into two camps, those mills which produce their own pulp, and those which are dependent on the open market for their pulp supplies. The latter naturally encourage pulp imports from outside nations in order to inject competition and have some control over prices, but the first named group is inclined to talk home product.

Japan is steadily increasing its importance as an importer of pulp, but in recent years this market has become less and less lucrative as the surplus tonnage of different countries has sought an outlet here. Canada is presently the leading exporter of pulp to Japan, but mills on the Pacific Coast of the United States have become more of a threat recently.

Attempts to bolster up a declining pulp market by artificial means is now sending out its repercussions. It is reported that one big Japanese pulp company, in need of many millions of yen to meet debentures due before the end of the year, has recently unloaded approximately $3,500,000 worth of pulp, and without too much compunction on the price. Such unloading has naturally soaked up some business that would otherwise have gone into imports.

As a consequence of actions similar to the one quoted, pulp prices are decidedly weak. There might be some small salve in the thought that some of the pulp being moved out of stock to raise cash is said to be five or more years old.

New Tissue Dispenser Introduced

The Airtex Corporation is marketing an improved toilet tissue with the aid of a patented dispenser. The tissue is a bleached sulphite product with good absorbent qualities and is packaged in special notched rolls manufactured expressly to fit the dispenser.

John R. Sigmore, president of the Airtex Corporation, states that the paper and the dispenser were first introduced in Western Canada several months ago and met with ready reception. Mr. Sigmore is now perfecting marketing facilities to introduce his commodities into the Pacific Northwest and the 11 Western states. National distribution is planned later.

The paper is being supplied by the Pacific Coast Paper Mills at Bellingham, Washington.

The Airtex Corporation plans shortly to begin the manufacture of paper towels for which a special type of patented dispenser is to be manufactured and sold, Mr. Sigmore announces.

B. C. Pulp Mills Continue Production

Although B. C. Pulp & Paper Company has been operating its mills at Woodfibre and Port Alice at capacity, the market continues dull and there is no immediate sign of improvement, according to President Lawrence W. Killam.

"Demand is light everywhere," said Mr. Killam, "but we are managing to keep stocks moving and so far there has been no development to justify curtailment of output."

Because of the high quality of its product, B. C. Pulp & Paper Company has been in a more fortunate position than many of the mills in eastern Canada, where production is reflecting the decline in paper manufacture to a greater degree.

Sees Business On the Upgrade

J. A. Carpenter, president of the Kansas City Paper House, Kansas City, Missouri, writes that "we are very much interested in your publication" and remarks concerning the business outlook:

"Regarding business for the next few months, I do not see anything very encouraging in the way of getting any large increase, but I do believe that things are looking better than they have any time since the first of the year. Our sales show a slight increase in March over January and February and I believe we have passed the bottom and are on the upgrade, but the progress is very slow and will continue to be slow probably for some time. I am not looking to do as much business this year as we did in 1930."

Receiver Ordered to Return Fees

In an opinion handed down by the Colorado Supreme Court on April 20, George W. Beck, receiver for the Colorado Pulp and Paper Company, was ordered to pay back $12,500 of the $20,000 he had drawn in fees since the firm was placed under his control in 1927. At the same time the action of District Judge S. W. Johnson in transferring four cases still pending to District Judge George Dunklee was nullified and the cases re-transferred to Judge E. V. Holland.

The affairs of the Colorado Pulp and Paper Company have been before the courts since rival groups of stockholders attempted to secure control some years ago. The friction resulted in the appointment of a receiver and later in a court order to put up the mill for sale. After various attempts at sale Judge Johnson finally approved one on a bid of $228,000 despite the fact $300,000 had been set as the upset price.

Is the European Pulp Curtailment Effective?

It is one thing to draw up and agree to a program to curtail production, another thing to carry out the plan. In the closing months of 1930 the sulphite pulp manufacturers of the principal producing countries in Northern Europe outlined and ratified an agreement to curtail production by 15%. In effect this program would lift from the world markets approximately 500,000 tons of sulphite. How that program is working out so far is discussed in the following report from the Paper Division, Department of Commerce, Bureau of Foreign and Domestic Commerce:

"Relative to the curtailment program, it is understood that this program was carried out approximately as agreed upon and that it has had a considerable stabilizing effect upon prices over the past several months. It remains to be seen, however, whether this will continue, since there has been a considerable reduction in the world demand and consumption of paper which may in part have offset the stabilizing effect of the sulphite pulp production curtailment program.

"If the stabilizing effect has not been sufficiently great, it is possible, according to Commercial Attache Lund, that the Scandinavian interests might declare a building holiday on new plants for the production of paper and pulp in order that production during the next five or ten years might not so far exceed consumption as at present.

"The lockout in the Norwegian industry actually took place on March 14 and is now in effect. There is at present no indication of its ending."

Arthur C. Zimmerman, manager of the board mill of the Pacific Straw Paper & Board Company at Longview, Washington, is the proud father of a new son, born to Mrs. Zimmerman on April 20.

400 *Western Speed Reducers* Over a Billion *Revolutions*

NOT A CENT *for* REPAIRS At the CLEARWATER MILL

In the mill of the Clearwater Timber Co., a Weyerhaeuser plant, 400 WESTERN HERRINGBONE SPEED REDUCERS are installed. Operating 1,500 shifts means that the pinion shaft of *each* of these units has revolved over 1,250,000,000 times. Not one cent has been spent for repairs or for investment in spare parts.

Western Gear Works
OPERATED AS THE NORTHWEST DIVISION OF
PACIFIC GEAR & TOOL WORKS
9th Ave. So. & King St. — Seattle, Washington

April 20 1931

Clearwater Timber Company
Lewiston
Idaho

Attention Mr. Roy Huffman

Gentlemen:

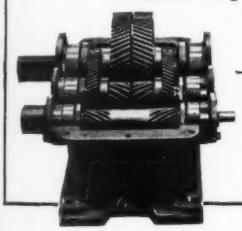
Since the Sawmill Engineering Conference is to be held in Lewiston, Idaho, in about a month, we felt that we would like to obtain some value from the fact that you have so many of our speed reducers installed in your plants.

When the writer was in Lewiston last fall he was informed by your operating men that never since the units were installed had the upper half of a Western Herringbone Gear Speed Reducer been removed for repair purposes. If this statement is still true, we would appreciate a verification.

Also, we would like to know the date that the mill was put in operation and the approximate number of shifts it has operated since that time.

With kindest regards from the writer, we are

Very truly yours,
WESTERN GEAR WORKS
Thos J. Bannan
Thomas J. Bannan
Vice-President



Clearwater Timber Company
MANUFACTURERS AND DISTRIBUTORS
IDAHO WHITE PINE — PONDOSA PINE
LEWISTON, IDAHO

April 24, 1931

Western Gear Works,
Seattle, Washington

Attention: Mr. Thomas J. Bannan,
Vice President

Dear Mr. Bannan:

Replying to your letter of April 20th, with reference to the Western Herringbone Gear Speed Reducers in our plant at Lewiston. Your information is correct that we have never had the slightest trouble with any of your gear reducers.

The mill started operating August 8th, 1927. Up until December 31st, 1930 it had run 1396 shifts. Since the first of the year we have been operating on a one shift basis, 6 days a week, and at the end of April will have run 105 shifts in 1931.

With kindest regards, I am,
Yours truly,
CLEARWATER TIMBER COMPANY,
Roy Huffman
Purchasing Agent.

RH:RF

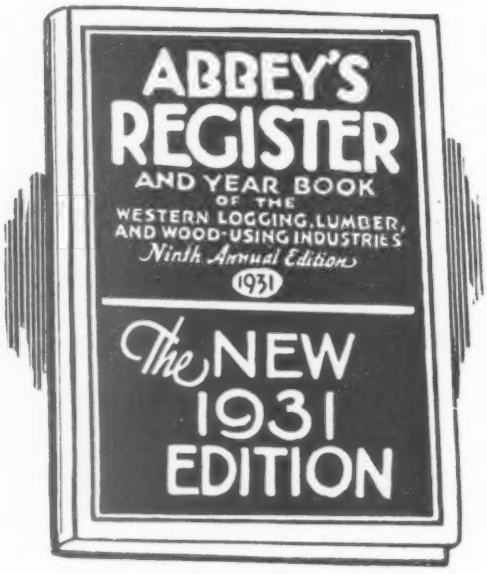
Other plants are duplicating these results which were obtained with ordinary care, efficient management, and WESTERN SPEED REDUCERS.

Eliminate shut down and inventory expense by using WESTERN made gears. Our engineers would like to co-operate in your mill.

Western Gear Works
SEATTLE, WASH.
Associated With **PACIFIC GEAR & TOOL WORKS** Incorporated
SAN FRANCISCO PORTLAND PACIFIC GEAR PRODUCTS EL PASO LOS ANGELES

WESTERN GEARS

The KEYNOTE is ACCURACY



The NEW 1931 ABBEY'S REGISTER

ACCURATELY recording 8594 separate operations is a JOB for Specialists.

ABBEY'S REGISTER is produced by a staff of Directory Specialists working the entire year.

FEATURES—

Geographical lists with officers, location, equipment, etc.

- Sawmills
- Logging Operations
- Planing Mills
- Shingle Mills
- Box Factories
- Pulp and Paper Mills
- Wood-working Plants
- Veneer Plants
- Wholesalers
- Exporters
- Wood Preserving Plants
- Door, Frame, Sash, Cross Arm, and Handle Mfgrs.

SAMPLE LISTING—

(from 1930 Logging Section)

Tideport Logging Co. 1005 Am. Bank Bldg.
E. B. Tanner, Pres.
L. H. Mills, Mgr.
G. A. Stock, Pur. Agt.
J. P. Joyce, Supt.
W. Weding, Master Mechanic.
Camp address, Jewell; Exp. & Frt., Astoria; Phone via Astoria: Daily output, 100M; Employes, 300; Sides. 3; Donk. eng., 19; gas, 1; Highleads, 3; Loaders, 3; Donkeys; Log tractors, 1; Mot. trucks, 1; Elec. light: Commissary; Mess; Mch. shop; Log. R. R. miles, 22; s. g.; wgt. of rls., 60 to 70; r. 3; g .3; Fuel, oil; Disconnected trucks. 116; flat 33, moving 1, tank 8; Max. grade, 7½ per cent; Speeders, 3; Loc. cranes, 1; 30 ton; Gas shovels, 4.

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PORTLAND, ORE.

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Singles out of the 8594 operations those planning improvements, changes, purchases, etc., and sends these in the form of several sheets of tips every 10 days to subscribers.

$15 a Year

Trial: $3 for 2 months

*What's the proper Speed of Chippers?

By SIGURD NORMAN
Engineer, Sumner Iron Works
Everett, Washington

The proper speed of chippers is of great concern to the pulp men as the vital importance of uniform chips is being realized more and more.

The general conception has been that the chipper should run slowly enough to allow the wood to drop back to the disc by gravity before the next knife commences to cut. Others claim that the knife draws the wood against the disc and the speed in that case should be so great that the wood has little chance to be disturbed before the next knife reaches it.

To determine which of these theories is right, we ran a series of tests with a 32" chipper. We found, however, that the spout angles, also the angle of the bed knife, had a bearing on this question. Therefore we first determined by experimenting what these angles should be to give the best results. To determine how the knife passed through the wood, we cut a 1" x 6" board placed on edge in the chipper spout.

The disc was then turned slowly by hand and the cutting action noted. It was found that the beforementioned angles could be so regulated that the cut would be parallel with the knives. Or more parallel with the disc. In the first case the top of the wood was resting against the disc when the knife had cut through. We then tried various speeds and the chips produced were classified. The results were as follows:

At a speed of 5,400 cuts per minute the chips produced contained about 45% of the desired length, in our case ¾", and an excessive amount of smalls. No over-size and no slivers.

A reduction of the speed increased the amount of the desired size so that at 3,500 cuts we had an average of 58% desired length, no over-size, no slivers, and about 30% ¼" and less.

The best results were obtained at speeds from 2,800 to 3,500 cuts and the following are the average results we arrived at by classifying a number of samples cut at a rate of 2,800 cuts per minute:

Retained on Screen

1"	Nothing
¾"	58.9
½"	20.5
¼"	17.
⅛"	2.3
Dust	1.3

It should be noted that all of the samples classified were taken directly from the chipper without screening them first and that each sample contained all the chips, dust, etc., produced each time, as the floor was swept before and after each run. Hemlock 2" x 4" in size was used in all cases.

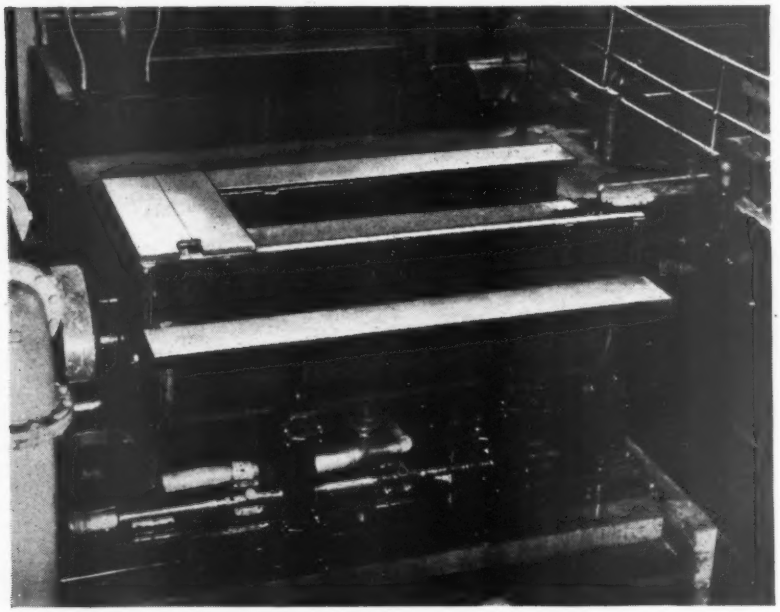
On account of the high speed of the chipper the chips were split up to a greater extent than at lower speeds, therefore, the classification did not give a true picture of the quality of the chips, as a great percentage of the chips classified as ¼" and ⅛" had the proper length of ¾" but were fine enough to pass endwise through the fine mesh.

The performance of the 32" chipper naturally will not be identical with that of a larger chipper and the results found should be compared to a large chipper in a somewhat modified form.

We are now builidng a direct driven 51" chipper based on the results we have found by experimenting with the 32". It will run 700 r.p.m. and have four knives, differing in several ways from the standard type of chipper.

It is readily admitted that present wood room practice in pulp mills can be greatly improved. Not enough of the original tree eventually reaches the digester in the form of first class chips. Mr. Norman's paper suggests the thought that fundamental changes rather than simple refinement of present types of equipment may point the way to greater efficiency.

*Paper presented at the Spring Meeting of the Pacific Section of TAPPI, Everett, Washington, April 18, 1931.



At the left is a Bird Screen installation on the new No. 11 machine of Crown Willamette Paper Company at Camas, Washington, while below is a close-up of a Vickery doctor, one of the many now performing at Camas.

65 Units of Bird Machinery In Camas Mill

In 1885, the paper mill at Camas, Washington, was turning out five tons of newsprint a day.

Now, the mill at Camas is turning out four hundred tons a day—and the paper is not newsprint, but high-grade specialties, converted right at the mill ready for the consumer.

The present state of the mill is the result of one of the most ambitious modernization projects the industry has ever seen. In two years, Crown Willamette has installed a new bandsaw mill, new chipping and chip-handling facilities, a new digester, a new bleachery, new power and water filtration plants, a converting plant, and three new paper machines. In addition to new construction, the company rebuilt four of the paper machines already in operation and tuned up all other existing equipment to meet the new scale of operations. That, we submit, is some program.

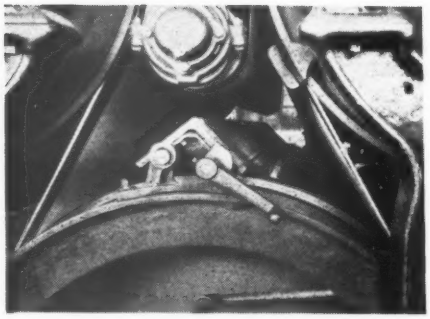
Such a big program, in fact, that the work of any single machinery manufacturer is more or less overwhelmed by the sheer bulk of the complete enterprise. We are assured, nevertheless, that Bird Machinery has had a share in transforming the Camas mill.

It is significant that after years of experience with it, the Bird equipment was specified throughout for the new paper machines. Nineteen Bird screens are now at work in the mill, handling all the stock for the new machines. The screening job is a hard one. High quality is a feature of all the mill's new products; yet volume production, continuously and at high speeds, is just as essential. Bird Screens are particularly efficient for this combination.

The felts on the new machines are kept clean by Vickery felt conditioners, and the dryers and calendars are maintained at peak efficiency by thirty-eight Vickery doctors.

Mayhew Holds Civic Honor

R. W. Mayhew, managing director of Sidney Roofing & Paper Company, Victoria, has been elected president of the Victoria Chamber of Commerce, after serving in the capacity of vice-president for several years.



B. C. Mills To Compete For SAFETY Shield

To stimulate a competitive interest in industrial accident prevention in the pulp and paper mills of British Columbia, a SAFETY shield has been sponsored by W. L. Ketchen, plant manager of the Port Alice mill of the B. C. Pulp & Paper Company, Ltd.

The shield was designed and made by O. B. Allen & Company of Vancouver, B. C., and now reposes in the Vancouver offices of the B. C. Pulp & Paper Company, pending the initial award.

Details of the competitive plan have not been worked out in final form, but this work is now in progress. A plan will be developed to put the mills on a somewhat equiptable basis, according to man hours worked and hazards. The shield will be awarded annually to the mill of highest standing.

Mr. Ketchen, at the recent annual SAFETY meeting held at Powell River, advocated inter-mill competition as an effective means for stimulating and maintaining interest in accident prevention. He is an earnest enthusiast on the subject. Mr. Ketchen points out that, taking the humanitarian element for granted, the monetary savings possible in diligent industrial SAFETY practice are well worth going after.

S·A·F·E·T·Y

FIRST — LAST — ALWAYS

The best safety device known is a careful man

Pacific Coast Division
Pulp and Paper Section

NATIONAL SAFETY COUNCIL

ROBERT H. SCANLON
Regional Director
Powell River Co., Ltd.
Powell River, B. C.

Cost of industrial SAFETY can easily be increased by yielding in the present emergency to the temptation dictated by the balance sheet to relax accident prevention diligence.

STATEMENT OF ACCIDENT EXPERIENCE—MARCH, 1931

(Mills in State of Washington)

COMPANY—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Puget Sound Pulp & Timber Co., Anacortes	22,688	0	0	30	1.322	1
St. Regis Kraft Co., Tacoma	7,707	0	0	10	1.285	2
Everett Pulp & Paper Co., Everett	79,296	1	12.6	31	.391	3
Grays Harbor Pulp & Paper Co., Hoquiam	55,407	1	18.0	14	.253	4
Crown Willamette Paper Co., Camas	268,103	5	18.6	195	.727	5
Fibreboard Products Inc., Port Angeles	34,138	1	29.3	25	.732	6
Washington Pulp & Paper Corp., Port Angeles	72,338	3	41.5	14	.194	7
Pacific Straw Paper & Board Co., Longview	19,688	1	50.8	3	.152	8
Longview Fibre Co., Longview	89,232	5	56.0	74	.829	9
Inland Empire Paper Co., Millwood	66,533	4	60.1	34	.511	10
Puget Sound Pulp & Timber Co., Bellingham	29,520	2	67.8	31	1.050	11
Rainier Pulp & Paper Co., Shelton	37,806	3	79.4	48	1.269	12
Shaffer Box Co., Tacoma	11,065	1	90.4	3	.271	13
National Paper Products Co., Port Townsend	84,703	8	94.4	53	.625	14
Columbia River Paper Mills, Vancouver	36,480	4	109.6	38	1.042	15
Puget Sound Pulp & Timber Co., Everett	60,475	7	115.7	75	1.240	16

The following Mills Not Reporting: Fibreboard Products Inc., Sumner; Pacific Coast Paper Mills; Cascade Paper Co., not in operation; Tumwater Paper Mills, not in operation.

Fred Boyce Visits The Coast

Fred C. Boyce, the grand old man of the American Pulp & Paper Mill Superintendents Association, returned late in April to his home in Wausau, Wisconsin, where he is a big factor in the production of Wausau Paper Mills' papers.

Mr. Boyce came to the Coast for recreation and reported that he had enjoyed his stay immensely. He came West by the Southern route and worked north along the Pacific Coast after spending some time in California. He returned East from Seattle.

During his stay Mr. Boyce had many pleasant visits with superintendents in Western mills, many of whom he had known when they held jobs in Eastern mills. He spent a pleasant Sunday with William H. Kelly, general manager of the Hawley Pulp & Paper Company, Oregon City.

DAN DUPUIS
General Superintendent
HAWLEY PULP & PAPER CO.
snapped in informal pose at the recent Spring Meeting of TAPPI at Everett.

Shelton Goes Back to Work

Within 24 hours after the citizens' committee of Shelton, Washington, had raised the fund of $166,000 necessary to effect an amicable settlement of the controversy between the Rainier Pulp & Paper Company and the oyster growers of the district, the pulp mill company awarded two preliminary contracts for work necessary to resumption of pulp production.

One contract covered the dismantling of liquor storage tanks and a four-mile pipe line running out to the deeper waters of the bay which carried off the sulphite liquors. The other contract, which went to Jim Coyne of Port Angeles, covered the construction of a wood-stave, copper bound pipe line from the pulp mill to the pot holes or "dry lakes" two miles west of Shelton where the liquor is to be discharged hereafter and evaporated.

Work on both contracts began at once.

All construction work must be completed within 20 days and the way cleared for operation of the pulp mill. In the mill itself a crew has been started on changes and overhaul work fitting the plant for its new operation, and this will insure the employment of all pulp mill operatives until such time as their regular work is open.

The three 200,000 gallon storage tanks at Mill Creek are to be taken down and removed to a new location at the pulp mill, where they will be used as settling tanks, from which the "red liquor," which was the cause of the controversy with oystermen, will be pumped over the hill and well away from Shelton. All the old pipe line, much of which has been replaced and is serviceable, will be used in the new line, but a large supply of new 10-inch wood pipe is being received ready for laying under the Coyne contract. Under the new plan there will be no strong liquor dumped into the bay, and no prospect of further trouble on this score.

The pulp mill-oyster controversy began about three years ago. Oyster growers charged that the sulphite wastes dumped in the comparatively shallow bays of the vicinity had seriously damaged the oyster beds. Although authorities differed and no agreement ever existed on what, if any, damage was done, the pulp mill was put in an embarrassing position when oyster interests filed damage suits which eventually totaled in excess of $1,500,000. The $166,000 fund raised by the Shelton citizens was to effect a settlement and to achieve conditions by which the mill could afford to remain in the community on a profitable basis. In raising the fund, Shelton demonstrated one of the finest examples of civic spirit ever witnessed on the Pacific Coast.

To Shelton the loss of the pulp mill with its two affiliated lumber mills was a most serious matter and stood completely to ruin the little city should the payroll and taxes be lost.

With the pollution question settled the mill will resume production on high grade bleached sulphite pulp, but will gradually change over the mill equipment for the exclusive manufacture of "Rayonier" pulp for rayon production. Development of the rayon grade pulp is the result of persistent research conducted under the supervision of Resident Manager D. B. Davies and men associated with him.

Outwitted By The Reds

For the second time in recent months the so-called embargo against commodities productd by convict labor has proved ineffective in barring out lumber from Soviet Russia. The shipload of lumber which arrived at Providence, R. I., late in April, for a test of the new regulations has been admitted. Under-secretary Mills wants it understood that the decision applies only to this particular shipment, but apparently there is nothing to prevent the Soviet from shipping any quantity of lumber here under similar conditions.

Last summer the Treasury detained shipments of lumber from Russia on the ground that they had been produced by convict labor. But the Treasury was unable to prove that charge and the cargoes were admitted. The department recently adopted a stricter policy, placing the burden of proof upon the importers. Conclusive evidence that convicts were forced to work in the forests of northern Russia caused the department to announce that any lumber coming from that area would be barred unless the importers could prove that convicts had nothing to do with its production.

In the case just decided the Soviet's commercial agency claims that the lumber did not come from the restricted area. Documentary evidence to that effect was presented at the hearing. The Treasury accepted that evidence in the absence of proof to the contrary. In effect, the situation is about the same as it was last summer, when the shipments of Soviet lumber were admitted because proof of their illegality was lacking. The Treasury has no means of finding out whether convict labor is used in the production of each specific cargo, and in the absence of such investigation its regulation is ineffective.

This case is particularly interesting because it foreshadows the difficulties the government will have in enforcing that provision in the tariff law excluding the products of forced labor, which becomes effective next January 1.

BAKERY SIDELINE WANTED

Side line of merit desired by salesman. Fifteen years of splendid following with coast bakery trade, calling on bakers every sixty days from Bakersfield to Oregon border, including Navada state.

Knows credit condition of each account — trade's friendship will enable me to give your product attention and results you want.

Address reply, Box 111, care Pacific Pulp and Paper Industry, 71 Columbia St., Seattle, Wash.

News Print Production—March, 1931

The News Print Service Bureau's Bulletin No. 159 shows production of news print paper in Canada during March, 1931, amounted to 187,005 tons and shipments to 187,730 tons. Production in the United States was 100,590 tons and shipments 101,044 tons, making a total United States and Canadian news print production of 287,595 tons and shipments of 288,774 tons. During March, 23,643 tons of news print were made in Newfoundland and 1,455 tons in Mexico, so that the total North American production for the month amounted to 312,693 tons.

The Canadian mills produced 70,279 tons less in the first three months of 1931 than in the first three months of 1930, which was a decrease of 12 per cent. The output in the United States was 59,216 tons or 17 per cent. less than for the first three months of 1930. Production in Newfoundland was 4,362 tons or 6 per cent more in the first three months of 1931 than in 1930 and in Mexico 998 tons less, making a continental decrease of 126,131 tons, or 12 per cent.

During March the Canadian mills operated at 58.1 per cent. of rated capacity, United States mills at 68.4 per cent., Newfoundland mills at 93.4 per cent., and Mexican mills at 78.8 per cent., making a continental average of 63.0 per cent. Stocks of news print paper at Canadian mills totalled 39,850 tons at the end of March, and at United States mills 32,254 tons, making a combined total of 72,104 tons which was equivalent to 4.0 days' average production.

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundland	Mexico	Total
1931—March	187,005	100,590	23,643	1,455	312,693
Three Months	534,280	290,564	72,302	3,860	901,006
1930—Three Months	604,559	349,780	67,940	4,858	1,027,137
1929—Three Months	618,893	342,052	59,607	4,958	1,025,510
1928—Three Months	573,307	353,509	54,561	3,999	985,376
1927—Three Months	487,804	388,555	51,039	3,497	930,895
1926—Three Months	429,444	415,591	40,886	3,076	888,997
1925—Three Months	363,866	371,545	15,758	3,046	754,215
1924—Three Months	336,039	370,850	16,183	2,874	725,946

Norwegian Lockout

A total of 30,000 metric tons of paper per month will be withdrawn from the market following the declaration of a lockout in the Norwegian industry, effective March 14. More than half of this—17,500 tons—consists of newsprint in rolls. Monthly output of other grades averages as follows: newsprint in sheets and other thin printings 1,500 tons, book and writing papers 2,500 tons, kraft wrappings and M. G. cap and tissues 3,000 tons each, grease-proof and parchment 2,000 pounds, and boards 1,000 tons. Most of the mills have considerable stocks on hand so that it is not expected that there will be a cessation of shipments in the near future, unless the threatened sympathetic strike of transport workers takes place.

Oscar Jorgenson, secretary of B. C. Pulp & Paper Company, is expected to return to Vancouver, B. C., in mid-May from the Orient. Mr. Jorgenson has been studying market conditions in Japan and China. He made a previous trip to the same field in 1929.

World Production of News Print Paper, 1930

With the cooperation of a number of the foreign organizations of paper manufacturers and the assistance of the Paper Division of the Bureau of Foreign and Domestic Commerce in Washington, the following estimates have been made of the world production, imports and exports of news print paper in 1930. The quantities under the caption "Balance at Home" do not necessarily correspond to domestic consumption, since in most cases, information is not available upon changes in stocks. Figures represent 2,000-pound tons, and with a few minor exceptions are believed to be essentially correct:

Country—	Production	Exports	Imports	Balance at Home
Canada	2,504,000	2,331,000	----------	173,000
United States	1,282,000	10,000	2,280,000	3,552,000
Great Britain	597,000	66,000	377,000	908,000
Germany	574,000	145,000	----------	429,000
Newfoundland	287,000	283,000	----------	4,000
Japan	285,000	73,000	21,000	233,000
France	242,000	----------	146,000	388,000
Sweden	240,000	192,000	3,000	51,000
Finland	223,000	205,000	----------	18,000
Norway	202,000	188,000	----------	14,000
Netherlands	84,000	70,000	75,000	89,000
Russia	75,000	----------	45,000	120,000
Austria	64,000	35,000	----------	29,000
Italy	53,000	1,000	8,000	60,000
Belgium	50,000	6,000	24,000	68,000
Switzerland	47,000	1,000	----------	46,000
Czechoslovakia	44,000	10,000	----------	34,000
Spain	32,000	----------	9,000	41,000
Estonia	29,000	24,000	----------	5,000
Poland	27,000	----------	3,000	30,000
Mexico	14,000	----------	----------	14,000
Denmark	10,000	----------	22,000	32,000
Latvia	4,000	----------	2,000	6,000
Not Specified	6,000	----------	----------	6,000
Total	6.975,000	3,640,000	3,015,000	6,350,000

World production of news print paper in 1930 was approximately 330,000 tons or 4½ percent. less than in 1929. There were decreases of 225,000 tons in Canada and 110,000 tons in the United States, of 40,000 tons in Great Britain, of 35,000 tons in Sweden and of nearly 50,000 tons in Germany. Increases included 30,000 tons each in Newfoundland and France, 13,000 tons in Norway and apparently a considerable quantity in Russia, but no satisfactory figures are available from that country.

In terms of total production in 1930, Canada supplied 36 per cent., the United States 18 per cent., Great Britain and Germany about 9 per cent. each and Newfoundland and Japan 4 per cent. each, the output of these six countries aggregating four-fifths of the world supply of news print.

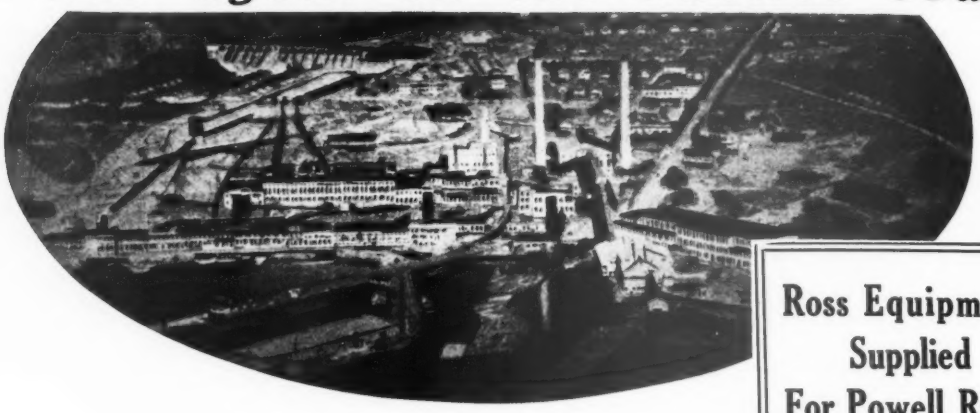
National Paper Box Offers Bonds

Energetic President Russell E. Barker, of British Columbia's National Paper Box Company Ltd., last month announced the offering of a $100,000 6½% sinking fund first mortgage bond issue secured by a closed first mortgage on all the fixed assets of the company. In addition the bonds constitute a floating charge on the other assets of the company and are additionally secured by a specific pledge of shares in other concerns held by the company. Net assets were shown to be $449,000.

Management will continue in the hands of Mr. Barker, who founded the company in 1913. With him are associated H. B. Senior and H. W. Smithson, both of whom have held executive positions with the company for many years. The company operates a modern paper container factory at Vancouver and also has a smaller plant at Victoria.

Mr. Barker is an active figure in the paper box trade, having formerly held the presidency of the Pacific Coast Paper Box Manufacturers' Association.

. . . and again on the Pacific coast!



ROSS SYSTEMS *AT* Powell River

With the recent addition of its seventh paper machine along with other extensions and improvements, the Powell River Company, Ltd., is now probably the largest single enterprise on the Pacific Coast. In their latest development, Ross equipment was again selected for the heating and ventilating—to provide the same character of satisfactory service secured from the previous installations of ROSS SYSTEMS at Powell River. What stronger proof of the dependability of Ross equipment than the continued confidence of the industry's most prominent leaders, such as Powell River in British Columbia? Only an impressive record of results could justify repeat orders from companies of this character.

◆ ◆ ◆ ◆ ◆

You can get the benefit of the long specialized experience possessed by Ross engineers in helping you to solve your heating, ventilating, drying and conditioning problem of any nature.. For smallest as well as largest items of equipment you can rely on Ross service to provide maximum efficiency and economy.

Ross Equipment Supplied For Powell River Company's Most Recent Addition

Complete heating and ventilating equipment including Ross-Briner Economizers for new 226 inch No. 7 machine.

A Ross-Grewin System for removing vapor from the pockets of No. 7 machine.

Heating and Ventilating System for the Beater Room.

Heating System for the Grinder Room.

Calender Blowers for cooling the calender rolls.

J. O. ROSS ENGINEERING CORPORATION

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ROSS ENGINEERING OF CANADA, LIMITED
New Birks Bldg., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

How Accurate Is the Pop Test?

A limited number of experiments were made at the Bureau of Standards, Paper Section, to compare Mullen bursting test results obtained with two different instruments and with two different gauges. The tests were made with adjacent instruments in the bureau's air-conditioned testing laboratory. Two papers having bursting values of approximately 17 and 30 pounds per square inch, and two gauges having capacities of 80 and 160 pounds were used.

The papers were first tested with one tester equipped with the 80-pound gauge, and the other with the 160-pound gauge. The two gauges were then interchanged and the tests repeated. Tests were then made with the two gauges attached to each machine. An average of twenty bursts on each sample of paper showed that the 80 and 160-pound gauges recorded approximately the same when used together on either machine.

There was, however, a small difference in test results when the gauges were used separately on the two different machines. This difference was not consistent in respect to either machines or gauges. The maximum difference in the average results when using either gauge or machine was approximately 15%, while the greatest average numerical deviation was approximately 2.0 points.

The results also showed that there was a variation amounting in some instances to nearly 20% between the averages of two groups of 10 tests each comprising the 20 tests made in each case. It appears, therefore, that check tests with identical conditions show differences as great as those for the various combinations of testers and gauges used. Hence one may conclude that within the limits of experimental error (some plus 10% or 15%) the two testers and the two gauges in any combination give concordant results for a given paper.

These results indicate the desirability of making a further study to include different types of gauges, the minimum number of individual tests required for a trustworthy average, the behavior of the mean deviation with an increasing number of individual tests, and the allowable or minimum unavoidable variation between repeated tests on the same sample of paper under identical conditions.

Dr. Lewis With Institute of Paper Chemistry

Harry F. Lewis, professor of organic chemistry at the Institute of Paper Chemistry, graduate school affiliated with Lawrence college, Appleton, Wisconsin, has been appointed dean of students. He will have charge of the admission of students, the organization of academic problems and the supervision of their academic work.

Dr. Lewis was formerly head of the department of chemistry at Ohio Wesleyan university, Delaware, Ohio, and previously was research chemist for the National Analine Chemical Company, Buffalo, New York.

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES AND CUSTOMS DISTRICTS

February, 1931

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision.)

PULP WOOD

	Rough				Peeled				Rossed			
	Spruce		Other		Spruce		Other		Spruce		Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
COUNTRIES—												
Canada and total	265	2,876	.....	.....	42,074	457,731	30,990	270,184	667	7,334	.....	.....

Total Imports of Pulpwood, February, 1931—73,996 cords; $738,125.

WOOD PULP

	Mechanically Ground				Chemical									
	Unbleached		Bleached		Unbleached Sulphite		Bleached Sulphite		Unbleached Sulphate		Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES:														
Czeckoslovakia	.....	.....	.....	.....	148	5,920	426	22,627	.....	.....	.....	.....	.....	.....
Estonia	.....	.....	.....	.....	1,488	59,687	.....	.....	.....	.....	.....	.....	.....	.....
Finland	482	12,788	531	12,637	3,350	137,234	153	8,134	1,508	45,536	28	1,296	.....	.....
Germany	.....	.....	.....	.....	786	38,585	3,182	182,001	.....	.....	44	2,618	.....	.....
Lithuania	.....	.....	.....	.....	100	4,328	.....	.....	.....	.....	.....	.....	.....	.....
Norway	.....	.....	225	5,746	650	31,568	1,964	100,152	900	27,709	.....	.....	.....	.....
Poland and Danzig	.....	.....	.....	.....	.....	.....	.....	.....	216	5,921	.....	.....	.....	.....
Sweden	.....	.....	.....	.....	27,834	1,180,783	3,664	190,404	24,644	927,612	220	7,781	.....	.....
Canada	12,741	349,167	.....	.....	10,529	455,814	13,461	934,224	3,950	269,810	1,334	116,758	342	18,800
Total	13,223	361,955	756	18,383	44,885	1,913,919	22,850	1,437,542	31,218	1,276,588	1,626	128,453	342	18,800
CUSTOMS DISTRICTS:														
Maine and New Hampshire	1,999	60,506	.....	.....	5,647	270,681	3,156	224,585	6,585	261,948	.....	.....	.....	.....
Vermont	1,054	30,614	.....	.....	408	19,830	995	60,978	3,691	259,669	1,334	116,758	119	5,530
Massachusetts	.....	.....	.....	.....	2,251	93,296	1,738	86,171	2,025	74,689	248	9,077	.....	.....
Connecticut	344	6,977	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Lawrence	1,432	41,942	.....	.....	922	44,505	2,526	184,262	82	4,482	.....	.....	105	7,110
Rochester	196	7,076	.....	.....	.....	.....	27	1,410	.....	.....	.....	.....	.....	.....
Buffalo	583	15,610	.....	.....	3,098	121,462	522	48,247	.....	.....	.....	.....	.....	.....
New York	1,374	35,942	.....	.....	13,048	541,197	2,416	116,051	456	11,755	.....	.....	.....	.....
Philalephia	.....	.....	256	6,365	1,925	67,574	1,855	110,046	350	11,456	.....	.....	.....	.....
Maryland	.....	.....	.....	.....	12,197	535,581	2,766	154,260	11,566	438,429	.....	.....	.....	.....
Virginia	279	6,607	500	12,018	2,796	116,358	312	19,306	4,817	148,052	44	2,618	.....	.....
New Orleans	203	6,181	.....	.....	50	2,008	252	14,837	.....	.....	.....	.....	.....	.....
San Francisco	.....	.....	.....	.....	325	18,166	.....	.....	1,551	62,189	.....	.....	.....	.....
Washington	.....	.....	.....	.....	129	5,443	285	15,129	.....	.....	.....	.....	.....	.....
Dakota	.....	.....	.....	.....	69	2,247	456	26,819	95	3,919	.....	.....	.....	.....
Duluth and Superior	2,825	61,719	.....	.....	.....	.....	22	1,192	.....	.....	.....	.....	.....	.....
Michigan	2,934	88,781	.....	.....	2,020	75,571	5,522	374,249	.....	.....	.....	.....	118	6,160
Total	13,223	361,955	756	18,383	44,885	1,913,919	22,850	1,437,542	31,218	1,276,588	1,626	128,453	342	18,800

Total Imports of All Grades of Wood Pulp, February, 1931—114,900 tons; $5,155,640.

Link Belt's new line of self-aligning pillow blocks is Timken Bearing Equipped

After the long experience which the Link Belt Company have had with Timken Bearings, it was only natural that they should again turn to Timkens for anti-friction protection when designing their new self-aligning pillow blocks.

For in this equipment, as in all types of modern machinery, friction elimination is only part of the problem. Shafts must also be held in rigid alignment and protected against radial loads, thrust loads or any combination of both. That is a job for Timken tapered construction, and that is the reason why Timken is the dominant bearing in practically every industry.

No matter what kind of equipment you are buying, if you specify "Timken Bearing Equipped" you are assured of unusual power and lubricating economies, greater operating efficiency, longer life and lower maintenance. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

When writing THE TIMKEN ROLLER BEARING CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

The Paper and Pulp Industry in February, 1931

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and cooperating organizations, the daily average of total paper production in February increased 7% over January, but was 16% under February, 1930. The daily average wood pulp production in February was 7% above January, 1931 and 21% under February, 1930.

Compared with February a year ago, the daily average production registered a decrease in the following grades: Newsprint, uncoated book, paperboard, bag, writing, hanging and building papers. The February 1931 daily average production of newsprint and hanging papers was lower than in January, 1931. Total shipments o fall major grades decreased 18% during the first two months of 1931 as compared with the first two months of 1930.

Identical pulp mill reports for two months of 1931 indicated that the total pulp consumed by reporting mills was 19% less than for two months of 1930, while total shipments to the open market during the first two months were also sharply below the total for the same period of 1930.

All grades of pulp, excepting bleached, easy bleaching, mitscherlich sulphite and kraft pulps, registered increases in inventory at the end of February, 1931, as against the need of January, 1931. As compared with February, 1930, news grade sulphite, easy bleaching sulphite and soda pulp registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF FEBRUARY, 1931.

GRADE	Production Tons	Shipments Tons	Stocks on Hand End of Month—Tons
Newsprint	88,788	90,901	33,627
Book (Uncoated)	76,877	77,200	63,311
Paperboard	160,097	156,150	67,690
Wrapping	42,342	41,560	47,748
Bag	10,116	9,829	7,212
Writing, etc.	26,013	25,964	49,024
Tissue (Reduction in No. of Mills)	6,140	6,110	2,739
Hanging	3,053	3,099	4,447
Building	4,617	4,457	3,040
Other Grades	14,081	14,457	15,617
Total—All grades	432,124	429,727	294,455

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF FEBRUARY, 1931.

GRADE:	Production Tons	Used During month—Tons	Shipped During Month—Tons	Stocks on Hand End of Month—Tons
Groundwood	63,230	61,514	1,539	47,779
Sulphite News Grade	28,261	26,868	1,483	6,386
Sulphite Bleached	21,913	20,697	2,422	3,418
Sulphite Easy Bleaching	2,467	2,632	200	1,029
Sulphite Mitscherlich	7,102	6,175	1,097	1,332
Kraft Pulp	27,279	22,384	5,279	7,561
Soda Pulp	19,080	13,980	4,936	2,933
Pulp—Other grades (Increase in Number of Mills)	549	383	125	353
Total—All grades	169,887	154,633	17,081	70,991

C. M. Paganini, president of the General Paper Company, San Francisco and Los Angeles, paid a visit to the Los Angeles office recently.

Canadian Exports of Pulp and Paper March, 1931

Canadian exports of pulp and paper in March were valued at $14,906,275 according to the report issued by the Canadian Pulp and Paper Association. This was an increase of $3,972,070 from the previous month.

Woodpulp exports for the month were valued at $3,267,236 and exports of paper at $11,639,039 as compared with $2,518,190 and $8,416,015 respectively, in the month of February.

Details for the various grades of pulp and paper are as follows:

	March, 1931		March, 1930	
PULP:	Tons	Dollars	Tons	Dollars
Mechanical	13,917	415,997	18,645	550,439
Sulphite Bleached	24,881	1,625,418	32,606	2,411,067
Sulphite Unbleached	15,560	665,699	20,749	1,041,300
Sulphate	7,317	506,646	11,416	646,978
Screenings	1,753	30,168	2,786	54,811
All Other	445	23,308	----	----
	63,873	3,267,236	86,202	4,704,595
PAPER:				
Newsprint	200,545	11,200,325	225,252	12,918,086
Wrapping	1,084	98,595	1,065	111,792
Book (cwts.)	2,376	19,896	3,286	36,639
Writing (cwts.)	412	3,293	154	1,038
All Other	----	316,930	----	394,144
		11,639,039		13,461,699

For the first three months of the year the exports of pulp and paper were valued at $37,230,773. In the corresponding months of 1930 the value was $47,720,569 so that there has been a decrease this year of $10,489,796. Details for the various grades are given below:

	3 Months, 1931		3 Months, 1930	
PULP:	Tons	Dollars	Tons	Dollars
Mechanical	40,086	1,210,062	55,240	1,636,261
Sulphite Bleached	61,649	4,075,889	79,041	5,908,479
Sulphite Unbleached	35,596	1,581,843	55,742	2,786,071
Sulphate	18,475	1,200,760	30,466	1,725,276
All Other	5,102	128,405	7,534	139,162
	160,908	8,196,959	228,023	12,195,249
PAPER:				
Newsprint	498,143	27,928,528	588,229	33,946,754
Wrapping	3,170	299,825	3,698	391,109
Book (cwts.)	5,864	51,955	11,367	106,967
Writing (cwts.)	780	7,894	475	4,839
All Other	----	745,612	----	1,075,651
		29,033,814		35,525,320

Pulpwood exports for the first three months of this year were 226,052 cords valued at $2,037,226 as compared with 391,963 cords valued at $3,608,389 in the corresponding months of last year.

L. A. Jobbers Reduce Prices

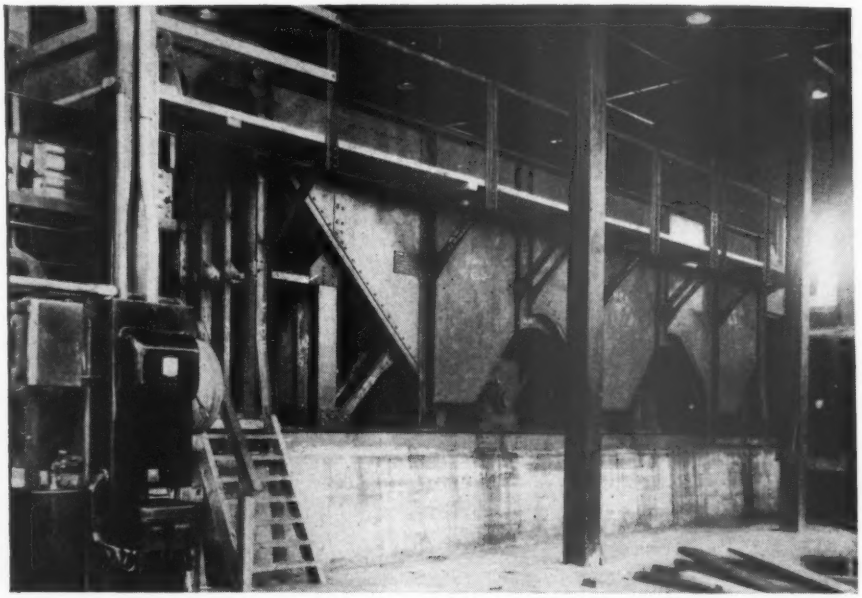
As predicted in the March issue of PACIFIC PULP & PAPER INDUSTRY all Los Angeles wholesale paper houses have issued new price lists which feature many new reductions.

According to authorities March business was quite an improvement over February, with April business fairly brisk.

One company reports increased sales of coated book papers on account of the recent low prices. Another company states that while the paper houses may give an appearance of briskness, all the hustle and bustle is caused by a number of small orders, instead of large orders.

All the firms belonging to the Los Angeles Wholesale Paper Trade Association will close their doors at five o'clock, after May 1, according to a recent announcement.

Ed. Herrlinger, president Gummed Product Company, Troy, N. Y., with Mrs. Herrlinger stopped in Los Angeles last month on his way to the Del Monte Convention.



Thorne Barker
installed at Port Alice

LARGE DIAMETER Pacific Coast timber is being successfully barked in the new Port Alice, Vancouver Island mill of the British Columbia Pulp and Paper Company. The Thorne Barker installed in the mill is the heaviest so far manufactured and is capable of handling logs ten feet long and up to thirty inches in diameter.

More than eighty Thorne Barkers are being successfully used in many of the leading pulp and paper mills in this and other countries. They remove all of the bark without brushing the ends of the logs. An installation in your mill assures the utmost in efficiency, economy and cleanliness. Thorne Barkers are built to handle logs up to eighteen feet in length.

ALLIS-CHALMERS
MILWAUKEE, WIS. U.S.A.

PACIFIC COAST OFFICES: Rialto Building, San Francisco, Calif.; Rowan Building, Los Angeles, Calif.; 1623 Smith Tower, Seattle, Wash.; 505 Lumbermen's Building, Portland, Ore.; N. 1024 Division St., Spokane, Wash.; 222 Continental Oil Builidng, Denver, Colo.; 915 Kearns Building, Salt Lake City, Utah.

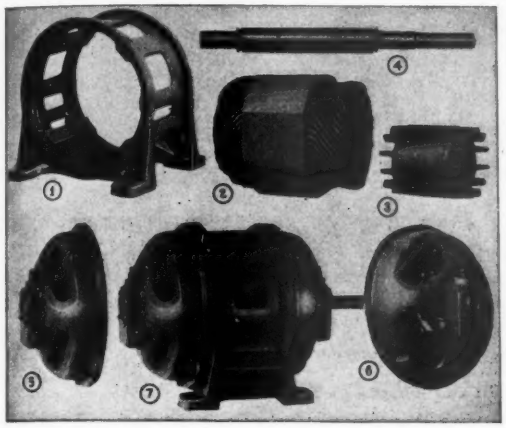
When writing to ALLIS-CHALMERS MFG. CO. *please mention* PACIFIC PULP & PAPER INDUSTRY

New Types
New Models
New Machines

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

New Dealers
New Branches
Appointments



Standard cast frame (1), standard pre-wound core (2), standard die-cast rotor (3), sealed sleeve bearing shaft (4), standard sealed sleeve bearing brackets (5) and (6), and a new Westinghouse type CS motor (7) equipped with sealed sleeve bearings.

Separable Mechanical and Electrical Motor Parts

In the design of the new Westinghouse W-frame type CS squirrel cage induction motor, the manufacturers have incorporated an important innovation in motor design; making the different parts of the motor as entirely separate units. Having adopted the separate parts idea, the company has only to keep the number of standardized parts in stock to be able to build, on short notice, a motor for a specific application. The new design makes maintenance simpler and less expensive, because damaged electrical parts can be replaced without replacing or rewinding the motor.

Hooker Returns From Honolulu

A. H. Hooker, Jr., energetic executive of the Hooker Electrochemical Company's Western activities centering around the fine new chlorine plant at Tacoma, Washington, returned late in April from Honolulu.

In all Mr. Hooker was absent from Tacoma headquarters for about two months. With Mrs. Hooker he made an extended trip, first going to California, then to the Islands, returning by way of Canadian-Australian line to Victoria, B. C. Mr. and Mrs. Hooker spent about two weeks in the Hawaiian Islands and report a most pleasant time there.

Link-Belt Positive Drives

Link-Belt Company, Indianapolis, Indiana, have just issued a new illustrated book, No. 1293, which describes the complete line of positive drives. Many illustrations of installations of these positive drive units are shown, with accompanying description which tells of the broad scope of this manufacturing and engineering achievement—"A Positive Drive for Every Purpose"—which is backed by prompt shipment from factory and jobber stocks, located at strategic points throughout the country.

Bingham Gets Weyerhaeuser Pump Order

Contract for supplying pumping and agitating equipment for the new 150-ton bleached sulphite mill now being erected by the Weyerhaeuser Timber Company at Longview, Washington, was let in April to the Bingham Pump Company, Portland.

The amount involved in the contract was not made public, but President R. V. Bingham said it would mean that the plant would have to operate three shifts, totaling 50 men, the remainder of the year to take care of the contract along with its other business. The plant has been operating one shift up to this time.

The Weyerhaeuser pump contract was said to be the largest of its kind ever let on the Pacific Coast.

New Fuel Handler At Port Angeles

Replacing the present system of handling hog fuel over the adjoining Charles Nelson mill dock, the Fibreboard Products plant at Port Angeles, Washington, is constructing a barge slip and fuel receiving system. The Puget Sound Bridge and Dredging Company has dredged a channel for the slip and the Olympic Pile Driving Company built the structure.

A stiff-leg derrick is to hoist fuel from scows to a position just at the rear of the mill's power house.

Since the Nelson mill closed a year ago last January the Fibreboard mill has brought in fuel from Sound mills and the Olympic Forest Products plant.

New Chipping Plant At Montesano

The International Wood & Sulphite Company has installed a new chipping plant at Montesano, Washington, in the Grays Harbor district, to utilize the Western Hemlock refuse of the big sawmill operations of the Schafer brothers there. The output of pulp chips will be used chiefly to supply the Grays Harbor Pulp & Paper Company's high grade bleached sulphite pulp and bond paper mill.

New Bailey Meter Man For Northwest

The Bailey Meter Company of Cleveland, Ohio, manufacturers of flow meters and other steam measuring and controlling instruments, have transferred Gordon Conrad from the main plant at Cleveland to the Pacific Northwest to act as assistant to L. E. Evans, Northwest manager, whose headquarters are in Seattle. Mr. Conrad will devote his time to both sales and service of Bailey instruments.

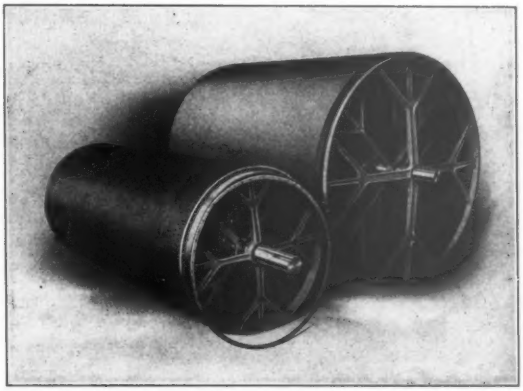
P. J. Lameroux, formerly identified with the Tumwater Paper Mills Company at Olympia, Washington, and later one of the guiding spirits in promoting a specialty plant for Eugene, Oregon, is making an extended stay in Los Angeles. His connection in that city was not learned.

Secretary Mellon reports that the Treasury Department will not issue an anti-dumping order against the importation of salt cake from Germany.

IMPCO

SPECIALISTS IN PULP HANDLING MACHINERY

The IMPCO system and line of machinery is designed, built and CONSTANTLY IMPROVED to furnish the most modern and economical methods for screening, washing and thickening Ground Wood, Sulphite, Sulphate and Old Paper Stock.



We Specialize In Cylinder Moulds

IMPROVED PAPER MACHINERY CORPORATION

NASHUA, NEW HAMPSHIRE, U. S. A.

SHERBROOKE MACHINERIES LIMITED
Sherbrooke, Quebec, Canada

Save-alls	Deckers	Screen Plates	Special Machines
Thickeners	Centrifugal Screens	Couch Rolls	Cylinder Moulds
Filters	Reed-Spafford Screens	Reclaimers	
Knotters	Tailing Screeners	Washing Machines	Repair Parts

When writing IMPROVED PAPER MACHINERY CORP., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

Ben Larrabee Joins Weyerhaeuser Staff

Effective May 1 Ben Larrabee joined the staff of the Pulp Division of the Weyerhaeuser Timber Company which is now being recruited about Robert B. Wolf, manager. Mr. Larrabee came to the Pacific Coast about a year ago from the pioneer State of Maine paper makers, the S. D. Warren Company, to take charge of pulp production at the new 175-ton bleached sulphite mill of the Olympic Forest Products Company at Port Angeles, Washington.

Mr. Larrabee is a veteran pulp maker. He is a member of the American Pulp & Paper Mill Superintendent's Association, and has always been an active worker in that organization. He has known Mr. Wolf for many years and was formerly associated with him in an Eastern mill.

International Still Interested in Colorado Timber

That the International Paper Company is still interested in the vast timber tracts in Southwestern Colorado is shown in a letter received by the Forestry Service in Denver protesting the action of the service in lapsing the contract of the International company. The letter written by John W. Hinman, president of the Trans-Mississippi Corporation, International's subsidiary, expressed the thought that the contract should have been extended until the company had had sufficient time to completely formulate its plans. The forfeit exacted by the Forestry Service was also protested.

In August, 1930, the International submitted a bid of approximately $5,500,000 for the estimated 2,040,000 cords of timber in the San Juan and Rio Grande National Forests. The bid was accepted by the Secretary of Agriculture and the paper firm was given until April 1 to announce its plans for the cutting. Although company officials spent considerable time going over the ground the plans were veiled in deepest secrecy. Cities bidding for mill locations were given no undue encouragement, but were not deterred in their efforts.

Surprise and keen regret were in evidence when the time for submitting plans expired and the International company failed to "prove up" on its award. The Forestry Service thereupon declared the contract cancelled and the deposit forfeited. Shortly after the International asked for an extension of time to two more years and this was taken as an indication that the company had merely held off due to present economic conditions —still intended cutting when the times were propitious. The Forestry Service denied the plea on the grounds no authority existed for such action.

Instead it was announced the two tracts would be held for private sale—turned over to any firm paying the $5,500,000 for them. The International's own bid set this value on the timber. It is thought that if no purchasers appear the two tracts will again be advertised for sale.

Coloradans are taking renewed encouragement from the fact that the International gives indication the company may yet buy the timber and establish mills.

Zellerbach Dividends Cut

Directors of Crown Zellerbach Corporation on May 4 cut in half the dividends on the corporation's preferred "A" and "B" stocks, and further recommended to the directorate of Crown Willamette Paper Company that the $7 dividend on that company's first preferred stock be cut to $4.

Crown Zellerbach Corporation's class "A" and "B" preferred dividends were declared at the rate of 75 cents a share, payable June 1 on stock of record May 13.

The recommendation to directors of Crown Willamette Paper Company is for a quarterly dividend of $1 a share, payable July 1 on the company's first preferred shares of record of June 13. Such action results in deferring payment of dividends on Crown Willamette second preferred stock.

Alaska Kills Proposed Fibre Container Tax

Introduced to provide straw for the drowning lumber mills in Southeastern Alaska which claim serious inroads have been made in their business by the wholesale adoption of the fibre container for shipping canned fish foods packed in Alaska, the Alaska territorial legislature on April 30 apparently thought better of the situation as a whole and killed a bill which proposed to levy a discriminatory excise tax on the fibre container.

While the plight of the Alaskan box shook manufacturers is perhaps acute, and the salmon canners were disposed to listen to reason, it was pointed out in hearings that adoption of the fibre containers was being forced upon the packers by the brokers, wholesalers, and retailers of canned goods. The distributing group has expressed a strong preference for the improved fibre container.

Expressions from the paper industry indicate that defeat of the proposed tax on fibre containers will eventually redound to the benefit of Southeastern Alaska, the lumber industries there included. In the past few years two big interests have carried out extensive timber and water power surveys preliminary to the establishment of two huge news print mills.

The vast pulptimber resources of Alaska presage a definite ultimate pulp and paper development in the territory. Any hostility towards the paper industry, such as suggesting discriminatory excise tax on fibre containers, could only serve to delay the greater ultimate development with its consequent investment of some tens of millions of dollars and its contribution of sizeable year-'round payrolls for Alaska. To kill the proposed tax was just plain good business.

Encouragement was given Pacific Coast pulp producers early in May by the announcement from one of the larger inter-coastal steamship companies of an emergency Eastbound water rate on wood pulp. The new rate is 25c per 100 lbs., with a density not to exceed 60 cubic feet per 2000 lbs., in lots of 500 tons or over. The new rate is to be in effect up to December 31st, 1931.

Other inter-coastal lines are understood to have met this reduction.

The new rate constitutes a double reduction from the previous basis of 30c per 100 lbs. with a density not exceeding 51 cubic feet per 2000 lbs. Those pulp producers who can hold the density of their pulp down to the former figure are thus enabled under the new rate to ship their product to the East Coast for considerably less than $5 per ton.

Cultivate The Home Market Well

Paper makers and box manufacturers are not always alert to their opportunities for cultivating a growing demand at home for their products, one Oregon manufacturing authority is quoted as saying. He recited a specific instance in which a paper box maker had complained there were no new local markets to be developed.

"I scouted around a little and found that our home-town jewelers were buying eastern set-up jewelry boxes. When I remonstrated against their policy of not buying home-made boxes they told me they did not know that such containers were available locally. I didn't know it, either, but I had the box maker make up samples which he submitted. He was able to meet the prices and sizes for which there was a demand—and he got several orders. The result is that Portland jewelers are now buying Portland-made jewelry boxes.

"Manufacturers may sometimes lack initiative to promote new uses for their products or fail to see new angles because they are too close to the problem. Moreover, some in the trade think they should have a long profit, even when business is brought to them.

"However, many paper manufacturers are alive to the possibility of boosting sales at home. The St. Helens Pulp & Paper Company is an outstanding example in this direction. Recently this company began production of a 40-pound bleached kraft stationery which is meeting with a good reception throughout Oregon. Chambers of Commerce in many Oregon cities have adopted this paper. The firm has just begun production of stationery in colors for which they are finding a ready market."

Lewthwaite Returns From Del Monte

A. J. Lewthwaite, a director of the Spaulding Pulp & Paper Company, Newberg, Oregon, has returned to his Portland office following a month's vacation at Del Monte. En route home he spent several days renewing acquaintances in San Francisco. While at Del Monte he spent much of his time on the greens.

Kapuskasing, Ontario, is more cheerful now that the New York Times controlled 600-ton news print mill, Spruce Falls Power & Paper Company, has resumed full time operation.

* * *

President Ossian Anderson of the Puget Sound Pulp & Timber Company left in mid-April for the East where he will contact a number of users of his company's pulp and hold a number of business conferences which will keep him away from executive headquarters at Everett, Washington, for the better part of a month.

* * *

W. S. Lucey, resident manager of the Grays Harbor Pulp & Paper Company, at Hoquiam, Washington, was a business visitor to San Francisco in mid-April.

* * *

Unemployment problems in the Grays Harbor district, big lumber and pulp producing center in Southwestern Washington, has brought about measures for effecting relief. One form of relief, carried out with the cooperation of the Grays Harbor Pulp & Paper Company, has been to put men to work cutting pulpwood.

THE HOTEL CONGRESS
The stopping place in Portland for Pulp and Paper Men

Sixth at Main Street
PORTLAND
OREGON
200 Rooms—200 Baths
Convenient Downtown Location.
Reasonable Rates Prevail
LOUIS E. BOGEL, Resident Manager

Out For Golf Honors

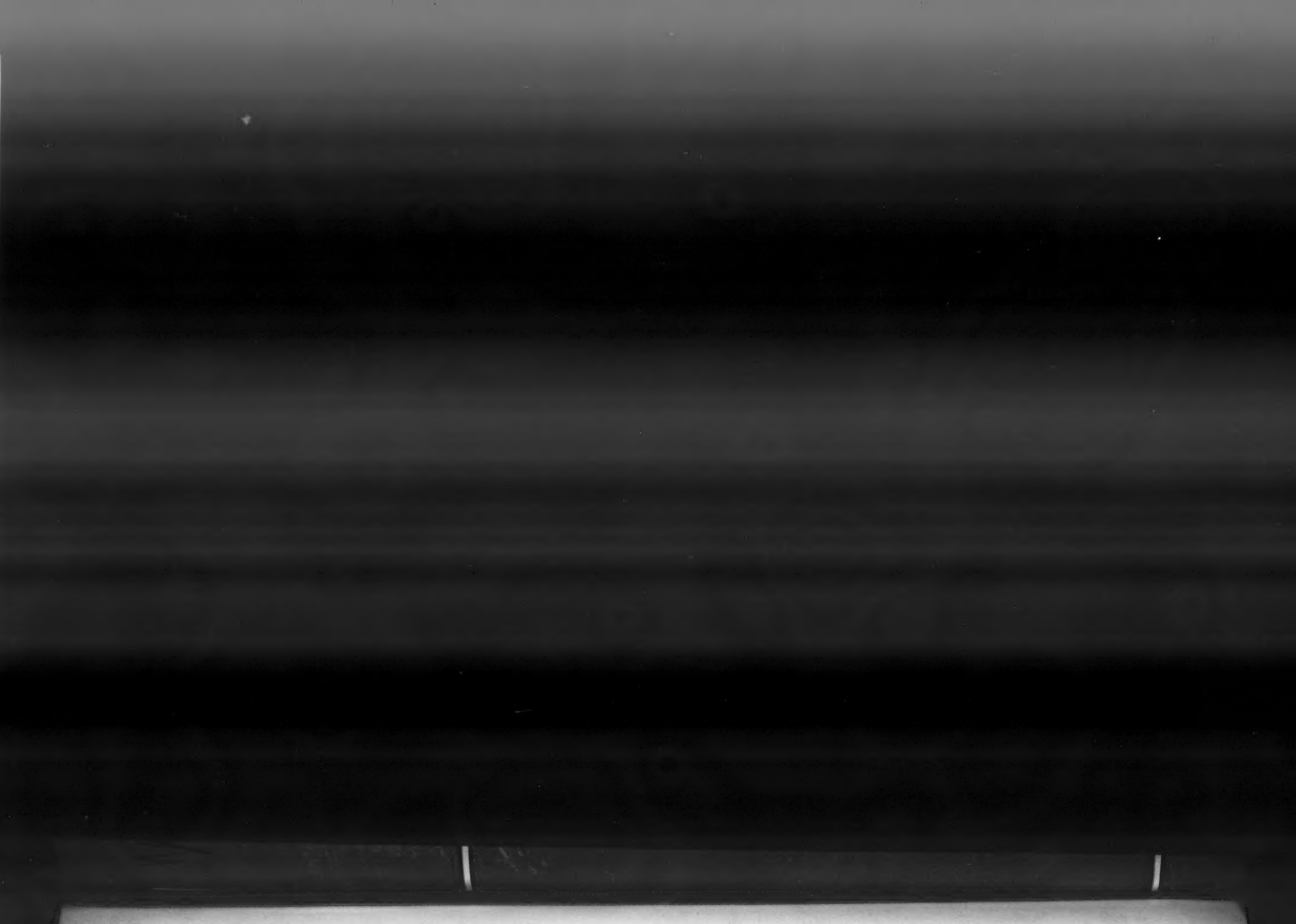
C. C. Hockley, Portland pulp and paper mill engineer, and C. A. Millington, superintendent of the Fir-Tex Insulating Board Company, St. Helens, are hanging up new records on the greens of the Portland Golf Club, of which they are members. The club was in the advanced stages of a cup tournament as this was written and both Mr. Hockley and Mr. Millington were confidently looking forward to winning the cup.

"You might put in your magazine that the winner will probably build a pulp mill," remarked Mr. Hockley facetiously.

Blackman To Address Colorado Paper Men

President A. W. Blackman of the National Paper Trades Association will reach Denver late in May to meet with and give an address before the Paper Merchants Lunch Club. He had agreed to stop off in Denver on his return from the Del Monte convention and tell of the work of local associations throughout the country. The Denver men are investigating the proposition of affiliating with the national organization.

Neah Bay, Washington, center of pulpwood cutting and chipping operations near Cape Flattery, probably will witness completion of its long-awaited road from the outside world this year. It was announced recently the Indian department had allotted $12,000 to the road. This amount will be used, it was said, to gravel the remaining four miles to be surfaced and to build a small bridge. Clallam county already has constructed its share of the road, the main part, while federal funds and contributed work by Neah Bay people have accounted for the remaining finished portions.

Operation on a three-shift basis was started in mid-April in the sawmill and chipping plant of the Olympic Forest Products mill at Port Angeles. Three 7-hour shifts were instituted in place of a former system of two 9-hour periods. It was understood sufficient orders were in prospect to continue the three shifts until June.

The Japanese steamer Gyokoh Maru picked up a parcel of sulphite pulp from the Grays Harbor Pulp & Paper Company at Hoquiam, Washington, last month for Japan.